PORTLAND GENERAL ELECTRIC COMPANY

121 SW Salmon
Portland OR 97204

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

Implementation Date of Plan: 10-9-85

Site Plan For: HARBORTON SUBSTATION

This Plan is being fully implemented under PGE management approval and direction. The Plan is subject to amendment as site conditions, legislation, and prevention technology require. Current copies of this Plan must be kept readily available.

TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM

Name of Facility: Harborton Substation

Type of Facility:
- X Transmission Substation
- X Distribution Substation
- ___ Other _____

Owner:
Portland General Electric Company
121 SW Salmon St
Portland OR 97204
(503) 226-8111

Implementation Date: 10-9-85

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature _____

Name Fred H. Lamoureaux

Title Manager, EM&C

Date October 3, 1985

Certification:

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices.

Signature _____

Name _____

Professional Engineer Registration No. _____

State _____

Date _____

REGISTERED PROFESSIONAL ENGINEER 6973 OREGON NOV. 20, 1970 RAYMOND HALICKI JR.

RFVB/5bc
7523L.885

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

Harborton Substation includes both Harborton Switchyard and Harborton East Substation. A regional and local map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Substation is located approximately 300 feet from the Willamette River. A dike separates the substation from the river. Surface runoff from the site enters a ditch west of the yard and flows northerly 3,000 feet to the Multnomah Channel. Most rainfall, however, will percolate into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITIONS OF THE SITE

The substation is lightly graded to the west with many flat or even pocketed areas within the yard. The soil base is a river-dredged silty sand which is moderately pervious to the type of oil used at the facility. The facility is protected from soil erosion by 8 inches of 3/4-in. minus 0-inch gravel. Penetration into the gravel is anticipated to be approximately 1-2 inches before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The enclosed area is approximately 540 feet x 950 feet, totaling 11.8 acres. The total property area is irregularly shaped and encloses approximately 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 7.28 pounds per gallon and a specific gravity of 0.874. The minimum flash point is 145°C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@ 100°C	3.0/36 sec
@ 40°C	12.0/66 sec
@ 0°C	76.0/350 sec

The containment vessels of concern are transformers and circuit breakers. The individual container capacity (gallons), failure flow-rate maximums (gallons per minute), description, and fail-safe engineering features are shown in Attachment B.

The direction of flow from the vessels is shown in Attachment A.

2.2 POTENTIAL CAUSES FOR OIL DISCHARGE

This SPCC Plan addresses the control of all oil discharges, from catastrophic failure through any other routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of oil released and the extent of environmental pollution possible.

The probable causes of routine operations and catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur during equipment servicing and operation of the substation.

- Equipment Servicing - Oil loss during filling or emptying of the containers will be approximately 25 gallons before shutoff can occur, if hose-fitting failure occurs. Upon noticing the discharge, the maintenance crew will close the container valve and shut down the pump. Cleanup operations, in accordance with the Oil Spill Contingency Plan (see Attachment C), will be initiated.

- Operation - Cooling radiators and other equipment through which oil flows can develop leaks. PGE's good housekeeping practices require that the ground under such leaks be cleaned up and protected from

further contamination and that the leaking part be repaired by maintenance crews. The contaminated material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by internal pressure buildup resulting from electric arcing deep in the vessel. This occurs faster than relief valves can reduce the pressure. The result is tank rupture. Vandalism or acts of sabotage may also result in catastrophic tank failure.

- Transformers - Up the two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil being blown out of the pressure relief valve.

- Circuit Breakers - Catastrophic failure of these devices may cause most of the oil to discharge immediately. If tank failure does not occur, venting could release minor amounts of oil.

- Oil Switches and Miscellaneous Vessels - Catastrophic failure of these items may cause the entire contents to be discharged immediately; however, these items have a volume generally less than 50 gallons.

2.3 METHOD OF DETECTING OIL DISCHARGES

Small leaks or drips will be noted during regular maintenance checks. If a failure occurs at a substation, PGE System Control Center (SCC) is notified promptly of failure by outage reports from customers. Emergency maintenance crews are dispatched immediately to the substation.

3.0 SECONDARY CONTAINMENT SYSTEM

There is no secondary containment system planned for this site.

4.0 CLEANUP PROCEDURES

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control and remove the oil are given in this plan.

5.0 SECURITY

An 8-foot-high metal security fence surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

6.0 PERSONNEL TRAINING

Briefings for operating personnel are scheduled regularly to keep them informed of current oil-spill control techniques and equipment. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

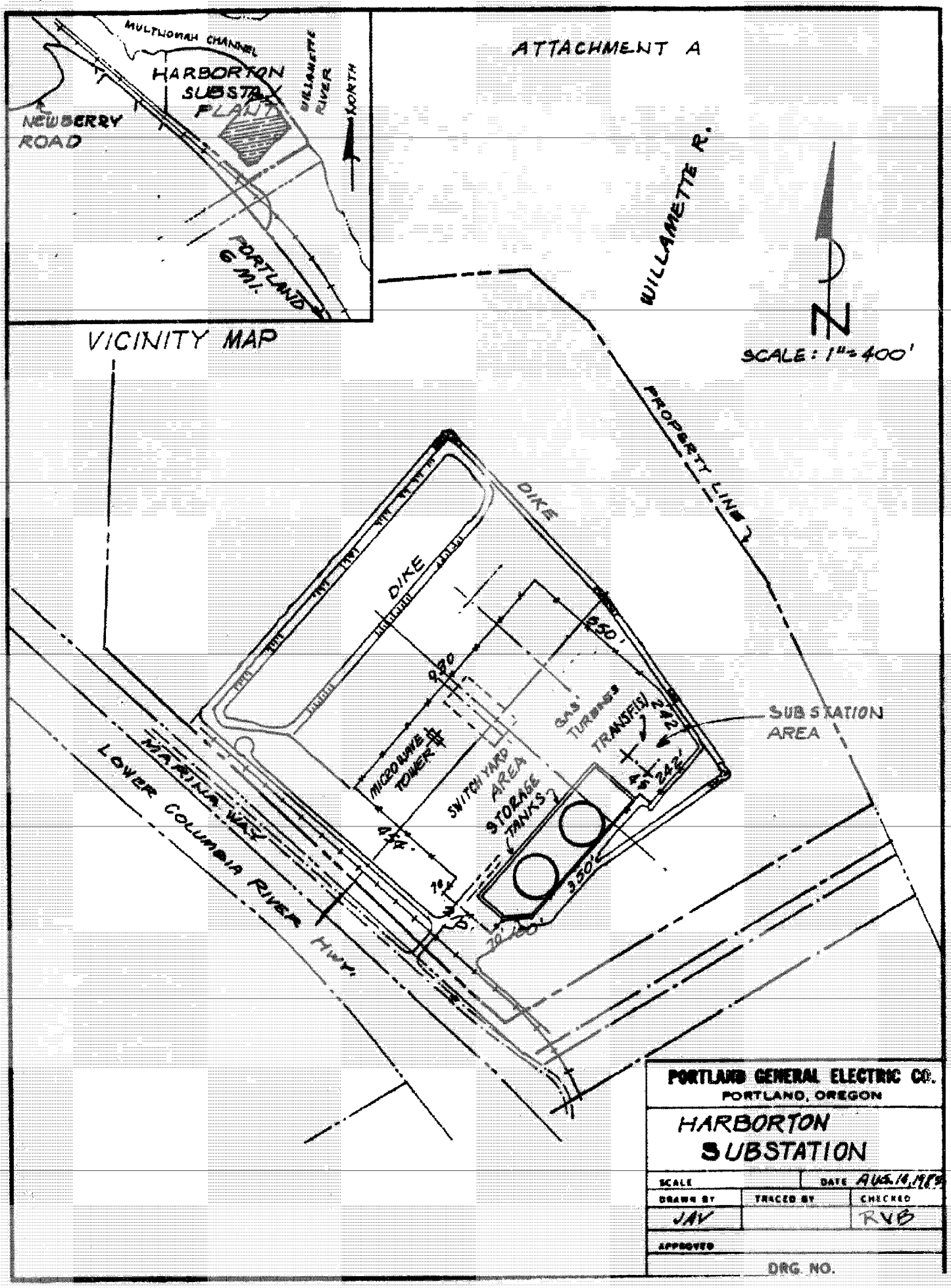
The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C).

7.0 INSPECTION AND RECORDS

This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operation, or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. All such reviews, evaluations, and revisions to this plan shall be documented on Attachment D.

8.0 SPILL HISTORY AT THE FACILITY

Date	Volume Spilled	Cause and Cleanup


ATTACHMENT A
MULTNOMAH CHANNEL
HARBORTON SUBSTA. X
FLANT
WILLAMETTE RIVER
NORTH
NEWBERRY ROAD
PORTLAND 6 MI.
VICINITY MAP
WILLAMETTE R.
N
SCALE: 1"=400'
PROPERTY LINE
DIKE
DIKE
250'
250'
MICROWAVE TOWER
GAS TURBINES
TRANSFERS
SUB STATION AREA
SWITCH YARD AREA
STORAGE TANKS
350'
MARINA WAY
LOWER COLUMBIA RIVER
HWY.
PORTLAND GENERAL ELECTRIC CO.
PORTLAND, OREGON
HARBORTON
SUBSTATION
SCALE
DATE AUG. 19, 1983
DRAWN BY
TRACED BY
CHECKED
JAV
RVB
APPROVED
DRG. NO.

ATTACHMENT B

HARBORTON SUBSTATION

Number of Containers	Type of Containers	Volume of Oil per Container (gallons)	Overland Flow Rate from Container (gpm)	Description of Tank Design and Construction	Fail-Safe Engineering Features
1	Transformer	6480	575	Rectangular steel tank with flat steel base. 6' x 14' x 14'H	Pressure Relief Valve
1	Transformer	5015	475	Rectangular steel tank with skid std. base. 6' x 13' x 15.5'H	Pressure Relief Valve
5X3=15	O.C.B.	715/T	60	3 Tanks/unit with circular steel case and skid mounted. 4.5'dia.x 8'H	Vent Pipe
2	O.C.B.	55	5	Circular steel tank with round steel top & flat bottom. 2'dia.x 2.5'H	Vent Pipe
1	O.C.B.	75	10	Circular steel tank with spherical cast steel top & flat bottom. 3'dia.x 3'H	Vent Pipe

OIL SPILL CONTINGENCY PLAN
(Attachment C)

A copy of the Contingency Plan is kept on file at EM&C headquarters in the Hawthorne Building. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in the reporting of any oil discharge to the System Control Center are conspicuously attached to an inside wall of the battery or control house.

A procedural guide is also kept at the System Control Center outlining the steps to be taken by that office in notifying the EM&C Department.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to Be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center at 226-8343 of the following conditions:

   a. The station name.

   b. Location.

   c. Equipment from which the oil discharge originated.

   d. An approximation of direction and quantity of flow.

   e. Required time of response.

   f. Water bodies or streams that might be involved.

B. Action to Be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and the EM&C Manager's office or the designated representative per EM&C's Emergency Call-Out Procedure. (See Division Operations Document 2010-1 and SOP 10-100.)

C. Action to Be Taken by EM&C Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Environmental Services Department will report the discharge to one or more of the following:

1. Discharges reaching navigable waters:

Duty Officer, National Response Center
U.S. Coast Guard
400 7th St SW
Washington DC 20590
Tel. (800) 424-8802 (24 hours)

and

State of Oregon Department of Environmental Quality
522 SW 5th
PO Box 1760
Portland OR 97207
Tel. (800) 452-0311 (24 hours)

FAILURE TO NOTIFY BOTH OF THE ABOVE AGENCIES IS A CRIMINAL OFFENSE PUNISHABLE BY A $10,000 FINE AND/OR UP TO ONE YEAR IMPRISONMENT (PL-92-500).

2. Discharges not reaching navigable waters (per OAR 340-47-015):

State of Oregon Department of Environmental Quality
522 SW 5th
PO Box 1760
Portland OR 97207
Tel. (800) 452-0311 (24 hours)

In the event DEQ cannot be reached:

Duty Officer, National Response Center
U.S. Coast Guard
400 7th St SW
Washington DC 20590
Tel. (800) 424-8802 (24 hours)

FAILURE TO NOTIFY THE OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY SHALL BE SUBJECT TO A CIVIL PENALTY OF NOT LESS THAN $50 NOR MORE THAN $10,000 FOR EACH DAY OF VIOLATION.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (503) 285-9111. Portland General Electric Company maintains a contractual agreement with Environmental Emergency Services Company to provide manpower, equipment, and materials requirements within the service area.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials. Sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be removed from the discharge site only with the approval of the DEQ Solid Waste Management Section to an authorized solid waste landfill.

6. Removal of waterborne oil and contaminated waste will be accomplished by Environmental Emergency Services Company with contaminated materials disposed of in accordance with State of Oregon DEQ regulations.

F. Follow-Up Report

1. EM&C will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed no later than seven days following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

RFVB/5s1h
6619L38.385

ATTACHMENT D

PORTLAND GENERAL ELECTRIC COMPANY

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

REVISIONS

SUPV	ENGR	DATE	BY	DESCRIPTION	CHK	APPR

RFV/eh
5-54.29A30

PORTLAND GENERAL ELECTRIC COMPANY

121 SW Salmon
Portland OR 97204

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

Implementation Date of Plan: 10-17-86 (REV 1)

Site Plan For: HARBORTON TANK FARM

This Plan is being fully implemented under PGE management approval and direction. The Plan is subject to amendment as site conditions, legislation, and prevention technology require. Current copies of this Plan must be kept readily available.

TABLE OF CONTENTS

SPILL PREVL .ION CONTROL AND COUNTERMEASURE . .AN (SPCC)
CERTIFICATION FORM

Name of Facility: Harborton Tank Farm

Type of Facility: ___Transmission Substation
___Distribution Substation
_X_Other Tank Farm

Owner: Portland General Electric Company
121 SW Salmon St
Portland OR 97204
(503) 226-8111

Implementation Date: September 11, 1974

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature F. H. Lamoureaux

Name F. H. Lamoureaux

Title General Manager, EM&C

Date OCT. 14, 1986

Certification:

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices.

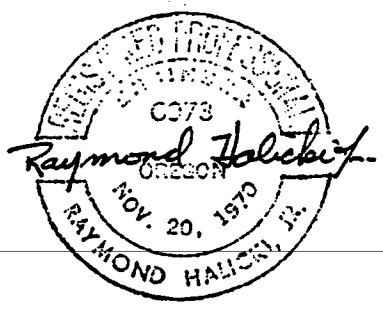
Signature Raymond Halicki Jr.

Name Raymond Halicki Jr.

Professional Engineer Registration No. 6973

State Oregon

Date OCT. 14, 1986



1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

The Harborton Tank Farm is located along the Willamette River, approximately two miles north of the St. John's Bridge off of N. W. St. Helens Road. A regional and local map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Tank Farm is located approximately 800-feet from the Willamette River. Two dikes, one about the perimeter of the property and another about the tank farm itself, seperate the tank farm from the river. Surface runoff from the area outside of the bermed tanks enters a ditch west of the yard and flows north about 3,000-feet to the Multnomah Channel. Most rainfall in this area, however, will percolate into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITIONS OF THE SITE

The property slopes generally to the west, but many areas are flat and pond water. The soil is river dredged silty sand which is moderately pervious to oil. The maximum penetration into the soil is anticipated to be approximately 1 to 3 inches.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The fenced area is approximately 900-feet by 800-feet, or about 16.5 acres. The size of PGE's parcel at this site is 64 acres.

2.0 OIL STORAGE AND SECONDARY CONTAINMENT SYSTEM

2.1 TANK FARM AREA

Two 94,000-barrel fuel tanks are surrounded by an impervious clay-lined berm with sufficient capacity to hold the contents of one tank with an approximately 15 percent safety factor. Minor oil spills in this area will be manually cleaned up and the impervious surface repaired. Larger quantities of oil would drain to one or both of the sumps in the area where it would be contained until manually removed for disposal.

The diked area surrounding the tanks has sumps located inside the area just south of each tank. Drain pipes with valves that are normally closed and locked run from these sumps through the berm. These valves are opened only under close surveillance to permit surface water to drain from the berm area.

The pumps, filters, and other equipment for the fuel-forwarding machinery are mounted on a curbed, concrete mat that drains into a sump. The mat is located inside a small diked area that also drains into the sump. Overflow from the sump runs into a tank that must be emptied manually and the contents disposed of as required by environmental regulations.

2.2 MARINE TANKER UNLOADING FACILITY

Tanker unloading is manual with personnel present on the dock and on board ship at all times during this operation.

Fuel unloading equipment is mechanical joint type with hoist beams and hoses. Fuel unloading piping is of all welded construction.

Fuel unloading hoses are drained before they are swung out for coupling to the tanker. A vent valve is provided at the high point of each unloading hose to permit complete drainage. Any residual amount will be drained into a drip pan for manual removal. The hoses are also drained after use and prior to disconnecting from the tanker.

Flange covers are installed on the inlet flanges of each marine unloading hose to eliminate oil drip due to incomplete drainage and to eliminate a possible source of hazard when the hoses are not in use. These covers are removed by the oil tanker crew prior to connection to the ship's cargo discharge flanges and reinstalled following disconnection.

Minor oil drip caused by incompletely drained unloading hoses while removing or reinstalling unloading hose flange covers is contained on board the ship containment aprons for removal by the ship's crew.

A curbed oil containment pan is installed under the unloading hose on the dock to catch drip. Oil from this pan is drained into a holding tank for manual removal.

Major oil leakage during tanker unloading is extremely unlikely under normal operation. It may occur in the event of an accident, such as a major collision or the ship breaking loose from its moorings while connected to the unloading hose. This could cause rupture of the oil piping and associated equipment. In such a case, personnel are always present, both on board ship and on the shore facility. The ship's crew will stop the cargo pumps, and the shore crew will close all isolating valves to stop further loss of oil. In such an event, oil cannot be contained on board ship or on the dock and will spill to the river.

During tanker oil unloading operations, spills resulting from a pipeline rupture will be limited by operators on duty by stopping shipboard unloading pumps and closing the pipeline shutoff valves. If a break occurs when the system is not in use, the spill will be limited to the contents of a portion of the pipeline depending on the exact location of the break.

2.3 PROCESS AREA

All oil-handling equipment other than piping is provided with curbed aprons that are manually emptied. Piping is all welded construction.

Fuel oil piping can be drained to oil sumps. Sump pumps are installed to return oil to the raw storage tanks or to a mobile tanker as necessary.

2.4 DISTILLATE FUEL OIL RAILCAR AND TRUCK LOADING AND UNLOADING FACILITY

Rail loading and truck unloading use the same facilities and are manual operations requiring attending personnel. Bottom-connected hosing and a loading/unloading pump are employed for this operation.

The fuel pumps are located at the fuel unloading station to permit visual monitoring by operators at all times during unloading or loading.

Fuel hoses are provided with caps at each end to prevent spills while handling hoses.

Hoses are drained or pumped out to the main fuel header prior to disconnecting. Drainage is also possible after the hoses are disconnected to local storage drums.

Fuel header valves are locked closed when the system is not in use.

In the event of an oil spill such as one that may be caused by a ruptured hose during loading or unloading, the operators stop the pumps and manually close the affected outlet valve on the tank car to stop further spillage.

The rail unloading area is graded using crushed stone or equivalent. Oil spills are contained in this area.

GB/5ch
9295L.986

3.0 CLEANUP PROCEDURES

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control and remove the are given in this plan.

4.0 SECURITY

An 8-foot high metal security fence surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

5.0 PERSONNEL TRAINING

Briefings for operating personnel are scheduled regularly to keep them informed of current oil spill control techniques and equipment. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C).

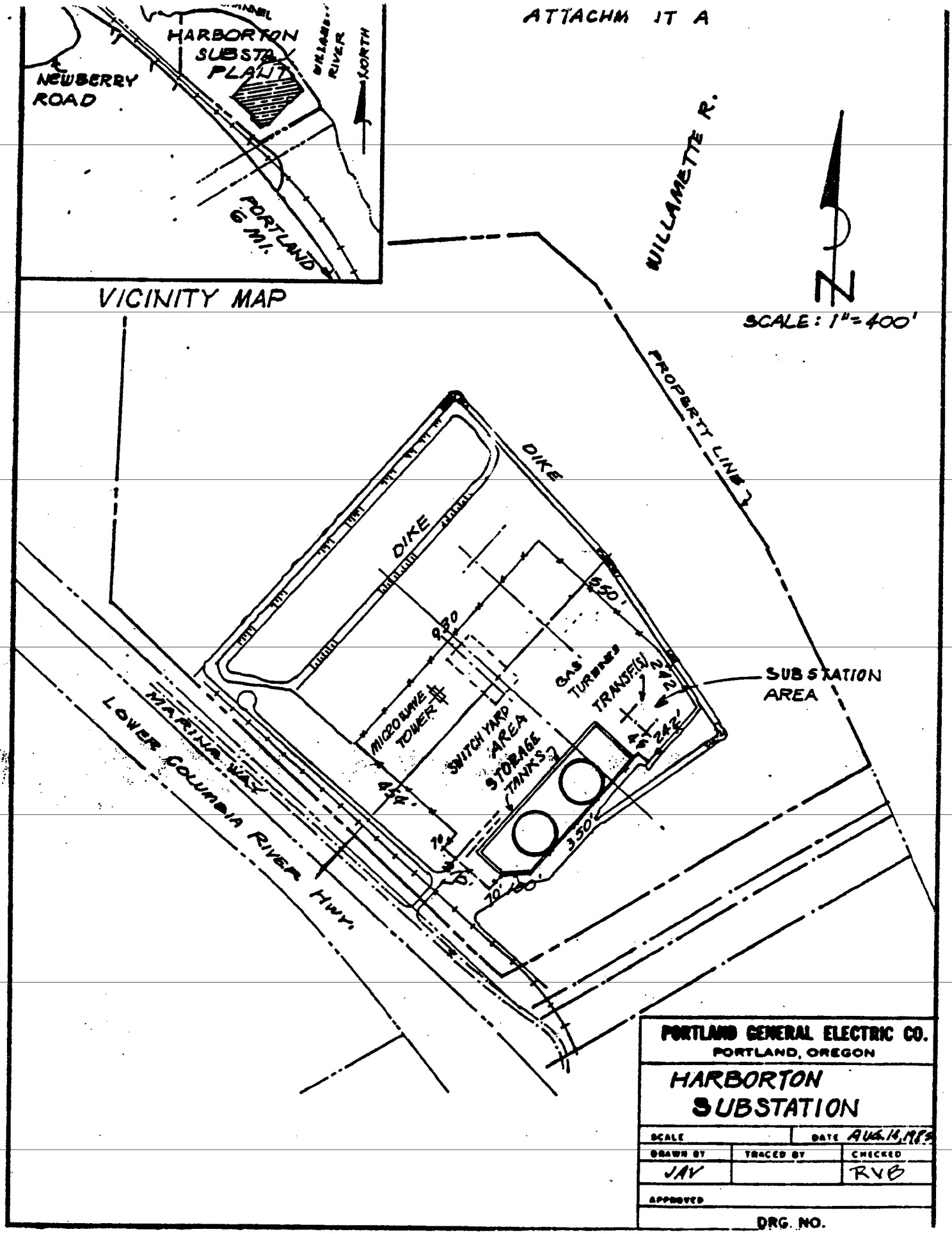
6.0 INSPECTION AND RECORDS

This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operation or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. All such reviews, evaluations, and revisions to this plan shall be documented on Attachment D.

7.0 SPILL HISTORY AT THE FACILITY

Date	Volume Spilled	Cause and Cleanup

ATTACHMENT A



PORTLAND GENERAL ELECTRIC CO. PORTLAND, OREGON		
HARBORTON SUBSTATION		
SCALE		DATE AUG. 14, 1985
DRAWN BY	TRACED BY	CHECKED
JAV		RVB
APPROVED		
DRG. NO.		

OIL SPILL CONTINGENCY PLAN
(Attachment C)

A copy of the Contingency Plan is kept on file at EM&C headquarters in the Hawthorne Building. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in the reporting of any oil discharge to the System Control Center are conspicuously attached to an inside wall of the battery or control house.

A procedural guide is also kept at the System Control Center outlining the steps to be taken by that office in notifying the EM&C Department.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to Be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center at 226-8343 of the following conditions:

   a. The station name.

   b. Location.

   c. Equipment from which the oil discharge originated.

   d. An approximation of direction and quantity of flow.

   e. Required time of response.

   f. Water bodies or streams that might be involved.

B. Action to Be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and the EM&C Manager's office or the designated representative per EM&C's Emergency Call-Out Procedure. (See Division Operations Document 2010-1 and SOP 10-100.)

C. Action to Be Taken by EM&C Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Environmental Services Department will report the discharge to one or more of the following:

1. Discharges reaching navigable waters:

   Duty Officer, National Response Center
   U.S. Coast Guard
   400 7th St SW
   Washington DC 20590
   Tel. (800) 424-8802 (24 hours)

   and

   State of Oregon Department of Environmental Quality
   522 SW 5th
   PO Box 1760
   Portland OR 97207
   Tel. (800) 452-0311 (24 hours)

   FAILURE TO NOTIFY BOTH OF THE ABOVE AGENCIES IS A CRIMINAL OFFENSE PUNISHABLE BY A $10,000 FINE AND/OR UP TO ONE YEAR IMPRISONMENT (PL-92-500).

2. Discharges not reaching navigable waters (per OAR 340-47-015):

   State of Oregon Department of Environmental Quality
   522 SW 5th
   PO Box 1760
   Portland OR 97207
   Tel. (800) 452-0311 (24 hours)

   In the event DEQ cannot be reached:

   Duty Officer, National Response Center
   U.S. Coast Guard
   400 7th St SW
   Washington DC 20590
   Tel. (800) 424-8802 (24 hours)

   FAILURE TO NOTIFY THE OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY SHALL BE SUBJECT TO A CIVIL PENALTY OF NOT LESS THAN $50 NOR MORE THAN $10,000 FOR EACH DAY OF VIOLATION.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (503) 285-9111. Portland General Electric Company maintains a contractual agreement with Environmental Emergency Services Company to provide manpower, equipment, and materials requirements within the service area.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials. Sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be removed from the discharge site only with the approval of the DEQ Solid Waste Management Section to an authorized solid waste landfill.

6. Removal of waterborne oil and contaminated waste will be accomplished by Environmental Emergency Services Company with contaminated materials disposed of in accordance with State of Oregon DEQ regulations.

F. Follow-Up Report

1. KM&C will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed no later than seven days following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

RFVB/5slh
6619L38.385

ATTACHMENT D

PORTLAND GENERAL ELECTRIC COMPANY
SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

REVISIONS

REV	SUPV	DATE	ENGR	DESCRIPTION	CHK	APPR
1	---	10/86	[signature]	GENERAL REVISION	[signature]	[signature]
0	AEO	9/74	AEO	PLAN ISSUED	AEO	AEO

APPENDIX E

SPILL PREVENTION PROCEDURES FOR THE HARBORTON SUBSTATION

PORTLAND GENERAL ELECTRIC COMPANY

121 SW Salmon
Portland OR 97204

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)

FOR HARBORTON SUBSTATION

Implementation Date of Plan: October 9, 1985

Latest Revision Date: March 5,1996

This Plan is being fully implemented under PGE management approval and direction. The Plan is subject to amendment as site conditions, legislation, and prevention technology require. Current copies of this Plan must be kept readily available.

TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "A"

Various Substation Properties

Portland General Electric Company
121 S.W. Salmon St.
Portland, OR 97204
(503) 464-8820

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature _____

Name George Normine

Title Manager, EM&C

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "B"

Harborton Substation
Owner:

Portland General Electric Company
121 SW Salmon St
Portland, OR 97204
(503) 464-8820

Implementation Date: October 9, 1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices.

Signature William E. Lawson

Name William E. Lawson

Professional Engineer Registration No. 9682

State Oregon

Date March 5, 1996

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A regional and local map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Substation is located approximately 300 feet from the Willamette River. A dike separates the substation from the river. The surface runoff is drained from the site to a ditch west of the yard that flows northernly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITION OF THE SITE

The substation yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known. The substation yard is protected from erosion by 8 inch thick 3/4-inch minus crushed rock. Oil spill penetration into the soil is estimated to be 1 inch to 2 inches before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The substation yard is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irregular shape property area totalling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 7.28 pounds per gallon and a specific gravity of 0.874. The minimum flash point is 145°C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@ 100°C . . . . . 3.0/36 sec
@ 40°C . . . . . 12.0/66 sec
@ 0°C . . . . . 76.0/350 sec

The containment vessels of concern are transformers and circuit breakers. The individual container capacity (gallons), failure flow-rate maximums (gallons per minute), description, and fail-safe engineering features are shown in Attachment B.

The direction of flow from the vessels is shown in Attachment A.

2.2 POTENTIAL CAUSES FOR OIL DISCHARGE

This SPCC Plan addresses the control of all oil discharges, from catastrophic failure through any other routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of oil released and the extent of environmental pollution possible.

The probable causes of routine operations and catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur during equipment servicing and operation of the substation.

- Equipment Servicing - Oil loss during filling or emptying of the containers will be approximately 25 gallons before shutoff can occur, if hose-fitting failure occurs. Upon noticing the discharge, the maintenance crew will close the container valve and shut down the pump. Cleanup operations, in accordance with the Oil Spill Contingency Plan (see Attachment C), will be initiated.

- Operation - Cooling radiators and other equipment through which oil flows can develop leaks. PGE's good housekeeping practices require that the ground under such leaks be cleaned up and protected from

further contamination and that the leaking part be repaired by maintenance crews. The contaminated material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by internal pressure buildup resulting from electric arcing deep in the vessel. This occurs faster than relief valves can reduce the pressure. The result is tank rupture. Vandalism or acts of sabotage may also result in catastrophic tank failure.

- Transformers - Up the two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil being blown out of the pressure relief valve.

- Circuit Breakers - Catastrophic failure of these devices may cause most of the oil to discharge immediately. If tank failure does not occur, venting could release minor amounts of oil.

- Oil Switches and Miscellaneous Vessels - Catastrophic failure of these items may cause the entire contents to be discharged immediately; however, these items have a volume generally less than 50 gallons.

2.3 METHOD OF DETECTING OIL DISCHARGES

Small leaks or drips will be noted during regular maintenance checks. If a failure occurs at a transmission or distribution substation, PGZ System Control Center (SCC) is notified promptly of failure by outage reports from customers. Emergency maintenance crews are dispatched immediately to the substation.

3.0 SECONDARY CONTAINMENT SYSTEM

There is currently no secondary containment system at Harborton Substation.

4.0 CLEANUP PROCEDURES

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control and remove the oil are given in this plan.

5.0 SECURITY

An 8-foot-high metal security fence surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

6.0 PERSONNEL TRAINING

Briefings for operating personnel are scheduled regularly to keep them informed of current oil-spill control techniques and equipment. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C).

7.0 INSPECTION AND RECORDS

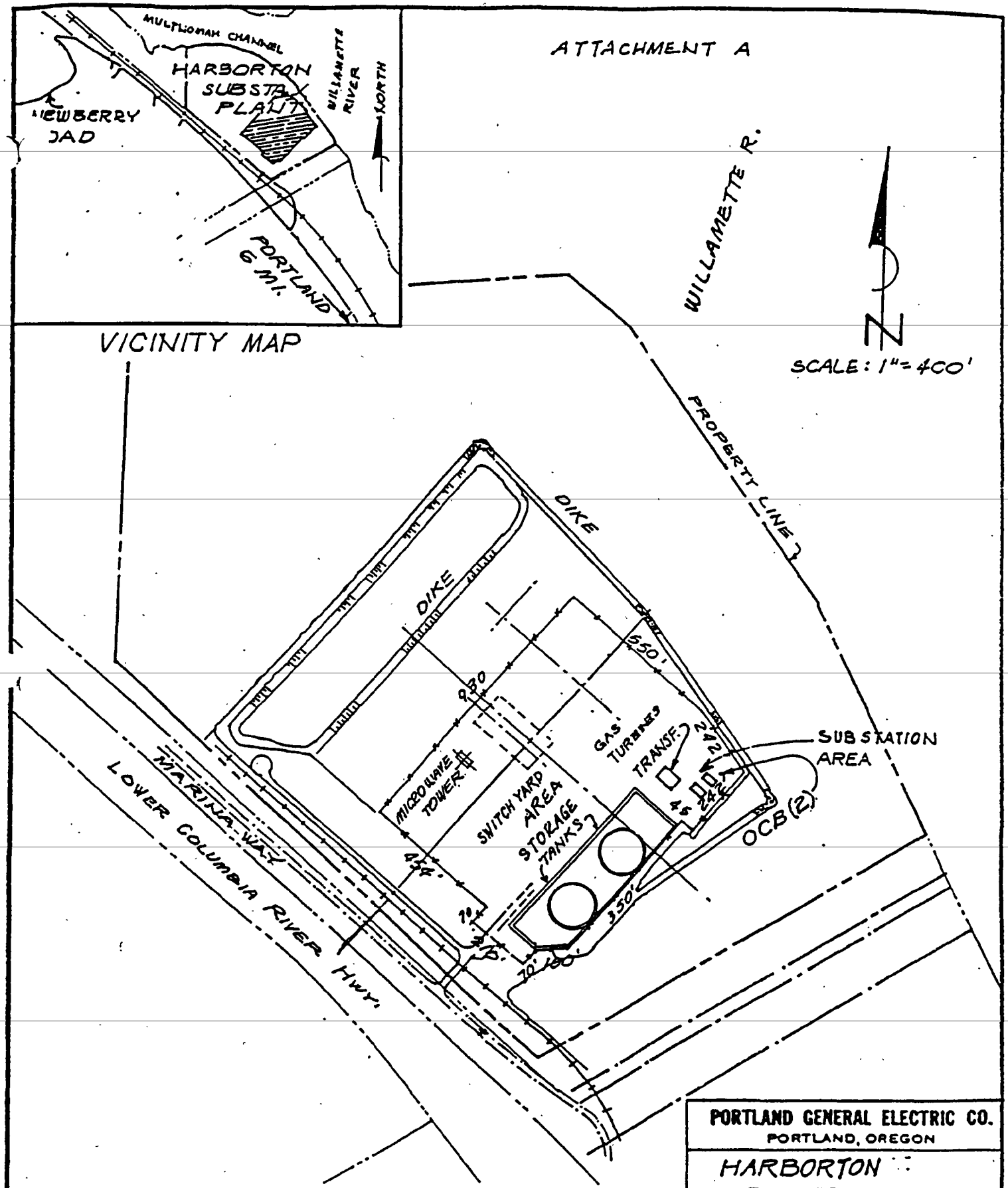
This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operation, or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. All such reviews, evaluations, and revisions to this plan shall be documented on Attachment D.

8.0 SPILL HISTORY AT THE FACILITY

Date	Volume Spilled	Cause and Cleanup

RFVB/5bc
6965L.0385

ATTACHMENT A



PORTLAND GENERAL ELECTRIC CO. PORTLAND, OREGON		
HARBORTON SUBSTATION		
SCALE		DATE AUG. 14, 1985
DRAWN BY	TRACED BY	CHECKED
JAV		RVB
APPROVED		
DRG NO.		

Number of Units	Number of Containers per Unit	Equipment Unit Type	Volume of Oil /container (Gallons)	Overland Flow Rate from Container (gpm)	Description of Tank Design and Construction	Fail-Safe Engineering Features
2	1	OIL BRKR DIST	55	10	Circular steel tank w/round steel top & flat bottom. 2'D x 2.5' H	Vent Pipe
1	1	OIL BRKR DIST	76	10	Rectangular steel tank w/skid mtd. base 2.5' x 5' x 7'H	Vent Pipe
1	1	TRANSFMR LTC	6483	575	Rectangular steel tank w/flat plate base. 6' x 14' x 13'H	Pressure Relief Valve

Note: Containers of less than 40 gal. capacity may not be listed.

OIL SPILL CONTINGENCY PLAN
(Attachment C)

A copy of the Contingency Plan is kept on file at EM&C headquarters in Oregon City. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in the reporting of any oil discharge to the System Control Center are conspicuously attached to an inside wall of the battery or control house.

A procedural guide is also kept at the System Control Center outlining the steps to be taken by that office in notifying the EM&C Department.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center at 464-8343 of the following conditions:

   a. The station name.

   b. Location.

   c. Equipment from which the oil discharge originated.

   d. An approximation of direction and quantity of flow.

   e. Required time of response.

   f. Water bodies or streams that might be involved.

B. Action to be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and the EM&C Manager's office or the designated representative per EM&C's Emergency Call-Out Procedure. See attached procedure.

C. Action to be Taken by EM&C Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Report oil spill to regulatory agencies if necessary.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (800) 334-0004.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials, Sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact Environmental Services for a manifest number.

6. Removal of waterborne oil and contaminated waste will be accomplished by Landscape Services or an approved contractor. Contaminated materials are to be disposed of in accordance with State of Oregon DEQ regulations.

F. Follow-Up Report

1. EM&C will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed no later than seven days following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

ATTACHMENT D

PORTLAND GENERAL ELECTRIC COMPANY

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

REVISIONS

ENGR	DATE	BY	DESCRIPTION	CHECK
FKJ	3/5/92	FKJ	REV. COVER PAGE, CERT. FORMS "A" & "B"	WEL
FKJ	3-26-93	FKJ	REV. SECT. 1.0, ATTACH. A & B	RVB

REFERENCES

(ATTACHMENT E)

1) EM&C Oil Spill Cleanup Procedure

2) System Load Dispatch Oil/PCB Discharge

3) Portland General Electric Oil Spill Report - Form (1058)

4) PGE Report For Transporting Electrical Equipment Or Material - Form (0080)

TO: Al Alexanderson ES-071-97
Grieg Anderson ENV 10
Dave Carboneau
Peggy Fowler
Wayne Lei
Wayne Mays
Fred Miller
Dennis Norton
Greg Rife
Jill Sughrue
Bruce Trout

FROM: Rick Hess Rick

DATE: February 3, 1997

SUBJECT: SUPERFUND AND OTHER CLEANUP EFFORTS BY PGE - QUARTERLY UPDATE

SEE ATTACHED

FOR PGE USE ONLY

SUPERFUND AND OTHER CLEANUP EFFORTS

STATUS REPORT

January 31, 1997

Updated or revised information is shown in bold.

BACKGROUND

PGE has been involved with the investigation and cleanup of several old spill sites, commonly called Superfund sites. The Oregon Department of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA) have rules that require the cleanup of these sites. The most common contaminant of concern is PCB in the soil. The PCBs are in the soil as a result of spillage of oils containing PCBs during the dismantling of transformers and other electrical equipment. The salvaged transformers were purchased primarily from electric utilities.

This report will also describe cleanup of PCB at several PGE properties.

PGE is currently involved with the investigation and/or cleanup of the following sites:

STRANDLEY/MANNING SITE

LOCATION: Near Purdy, WA (NW of Tacoma)

PGE Superfund site involvement since 1984

Estimated cost of cleanup: $9,000,000

PGE share of cleanup cost: 3.1 % ($248,000)

STATUS:

The disposal of 6,000 cubic yards of PCB contaminated soil stored on site was completed in November 1993. Studies dealing with defining the extent of contamination remaining in a creek that is on site have been completed. Final remedial action plans will be based on this and other data collected at the site.

Two of the responsible parties have settled with the utility group for a total of approximately $1.2 million dollars.

The utility group has settled with the site operator's insurance company for $1,600,000. This settlement will reduce the cost of cleanup paid by the utility group.

Status: Approximately 100 gallons of transformer oil leaked from a low voltage bushing into the ground under the transformer. The leak probably started after the transformer was installed in 1987. The oil contained 35 ppm PCB. The extent of soil contamination is not easily determined because the transformer is located in the middle of a lumber mill. All of the adjacent soil, up to 100 feet or more from the transformer, is covered with asphalt, concrete or equipment. There is no apparent threat to human health or the environment. The transformer was replaced. A cleanup of the soil is not feasible at this time. The lumber company does not want to disrupt the lumber mill operation to do a cleanup. No cleanup will be conducted until the use of the land changes.

A letter of understanding is being prepared for PGE and Willamina Lumber to address the oil remaining in the soil under the transformer and the lumber mill.

Komatsu Site

A padmounted transformer located at the Komatsu site in Hillsboro was damaged at this construction site by an unknown source. A hole was made in the cooling fin. Approximately 210 gallons of transformer oil with no detectable PCB leaked into the soil under and around the transformer. For the convenience of the contractors, the cleanup of the oil was scheduled for a Sunday when the shutdown of the transformer would least affect the plant construction. On the Saturday before the cleanup, a subcontractor dug trenches near the transformer. These trenches filled with rain water and transformer oil. The subcontractor pumped the oil and water onto another part of the construction site creating a larger cleanup area. A subcontractor cleaned up the area contaminated by the pumping operation. PGE removed 100 cubic yards of contaminated soil from under and adjacent to the transformer. The costs of cleanup will be billed to the subcontractor.

* * * * *

PORTLAND GENERAL ELECTRIC COMPANY

121 S. W. Salmon
Portland, Oregon 97204

IF A SPILL HAS OCCURRED, PROCEED TO ATTACHMENT "C" FOR IMMEDIATE ACTIONS

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN

Implementation Date of Plan: 10/09/1985

Site Plan For: **Harborton Storage Yard**

Latest Revision Date for Plan: **07/28/1997**

This Plan is being fully implemented under PGE management approval and direction. The Plan is subject to amendment as site conditions, legislation, and prevention technology require. Current copies of this Plan must be kept readily available. (40 CFR Sections 112.3 & 112.5 (1996))

TABLE OF CONTENTS

Spill Prevention Control and Countermeasure (SPCC) Plan
CERTIFICATION FORM "A"

Facility

Portland General Electric Company
Oregon City Headquarters
209 Warner Milne Rd.
Oregon City, Oregon 97045
(503) 650-1405

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this **Spill Prevention Control and Countermeasure (SPCC) Plan.** (40 CFR Part 112.7(a))

Signature George L Normine

Name George Normine

Title General Manager EMTC

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN CERTIFICATION FORM "B"

Facility:

Portland General Electric Company
Harborton Storage Yard
12430 St. Helens Road
Portland, Oregon
(503) 650-1405 (Repair Desk Oregon City)

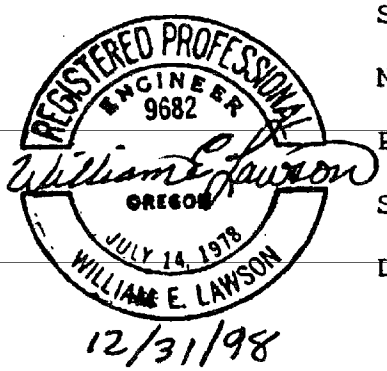
Owner:

Portland General Electric Company
121 SW Salmon St
Portland, OR 97204
(503) 464-8521 (Environmental Services Dept.)

Implementation Date: 10/09/1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices. (40 CFR Section 112.3(d))



12/31/98

Signature William E. Lawson

Name William E. Lawson

Professional Engineer Registration No. 9682

State Oregon

Date July 28, 1997

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Storage Yard is located approximately 300 feet from the Willamette River. A dike separates the Storage Yard form the river which is "navigable waters". The surface runoff is drained from the site to a ditch west of the yard that flows northerly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITIONS OF THE SITE

The Storage Yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known, The Storage Yard is protected from erosion by 8 inch thick 3/4 inch minus crushed rock. Oil spill penetration into the soil is estimated to be one to two feet before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irrgular shape property area totalling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY
(40 CFR Part 112.2)

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

2.1.1 Oil Used in Electrical Equipment

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 6.882 pounds per gallon and a specific gravity of 0.920. The minimum flash point is 145°C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@100°C..... 3.0/36 sec
@ 40°C..... 12.0/66 sec
@ 0°C..... 76.0/350 sec

The containment vessels of concern containing the above oil are lectrical equipment such as pole mounted transformers, pad mounted transformers, regulators, tanks, and other oil filled electrical equipment and tanks. The individual container capacity (gallons), failure flow-rate (maximums gallons per minute), and fail-safe engineering features very depending on the type and size of these oil fill electrical units. Electrical units stored in the yard areas are not energized. Thus, these units will not spill oil as a result of an electrical fault in the unit.

Should oil spill result from an accident, the oil would flow into the sandy soil. A small volume of spilled oil (approximately 20 to 30 gallons) would be contained in the the sandy soil. Larger volumes of spilled oil (above 25 gallons) that exceed the capacity of the soil would reach ground water.

Several substation type transformers are stored in this section of the yard. A sand berm is used as containment in the east section of the storage yard area.

2.1.2 Oil Filled Electrical Equipment

Other pole mounted transformers are stored on the north side of the service center yard. These units are not energized. Thus, these units will not spill oil as a result of an electrical fault. Should a unit be broken open, the oil will spill out in the direction of a catch basin in the yard.

Transformers and other oil filled equipment with the known level of PCB in the oil are not stored in the yard area. When small leaking oil filled units are shipped to this site, they are placed in bags and placed in a pan. A plastic cover is

placed over the units to protect against rain.

However, should a unit be dropped or punctured, any spilled oil is immediately cleanup. The direction of flow from the transformer storage areas is shown in Attachment A.

Large pad mounted transformers are stored on the grounds of the storage area yard. These units are not energized. Thus, these units will not spill oil as a result of an electrical fault. Should a unit be broken open, the oil will spill out in a downward direction into the yard soil. See Attachment "A".

2.1.3 Storage Tanks

Several storage tanks are in service at the storage yard and contain transformer oil. The oil is the same as described in section 2.1 above.

The skid tanks are steel structures which are designed to be loaded on to trucks for transport to substations under maintenance. Each tank contains up to 10,000 gallons of transformer oil.

2.2 POTENTIAL CAUSES FOR OIL OR FUEL DISCHARGES

This SPCC Plan addresses the control of all oil and fuel discharges from routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of hydrocarbons released and the extent of environmental pollution possible.

The probable causes of a spill during routine operations or a catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur should the equipment be damaged while moving units from one area to another or loading an electrical oil filled unit onto or off of a truck. A fueling nozzles malfunction or an oil transfer hose failure can also be a source of a fuel or oil spill.

-**Spills From Equipment or Tanks** - Oil loss during transfer operations or moving the containers resulting from dropping a unit will be approximately 5 to 50 gallons. Upon noticing the discharge or spill, the maintenance or operation crew will initiate cleanup operation in accordance with the Oil Spill Contingency Plan (see Attachment C).

-**Operation** - Transformer brought in from the field for repair or disposal may have oil leaks. These leaking transformers are placed into steel trays. The leaking part is sealed by maintenance crews. Any contaminated

material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by dropping the unit or puncturing the vessel. Vandalism or acts of sabotage may also result in catastrophic tank failure.

-**Transformers** - Up to two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil leaking from defective gaskets or punctures in the container.

-**Tanks** - Containment is provided for the volume of the largest tank in the containment area. Should a valve be broken or opened as an act of vandalism or sabotage, the containment will hold the contents of the largest unit.

2.3 METHOD OF DETECTING OIL DISCHARGES

The Harborton Storage Yard is an unmanned site. Routine patrol of the site is conducted during off hours. Visual inspection provides detection at all locations. Incidental leaks and small spills will be handled by trained maintenance crews. Large spills will activate the Oil Spill Contingency Plan (Attachment C).

3.0 SECONDARY CONTAINMENT SYSTEM
(40 CFR Section 112.7(c))

This site has minimal oil spill containment sand berms installed in the east stoage yard to protect against the unlikely event of an oil spill. The containment structures are designed to stop spilled oil from entering the surface water of nearby wet lands. The west yard is not equipped with oil spill containment. See Attachment A.

4.0 CLEANUP PROCEDURES
(40 CFR Section 112.7(e)(2)(x))

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control, stop the flow and remove the oil are given in this plan.

5.0 SITE SECURITY AND CONTROL
(40 CFR Section 112.7(e)(9))

An 8-foot high metal security fence with gates surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

In the unlikely event of a spill, additional security of off-site areas affected by a spill will be established by operations personnel using barrier tape, traffic cones, etc. to designate the exclusion zone.

6.0 PERSONNEL TRAINING AND COMMUNICATION
(40 CFR Section 112.7(e)(10))

Briefings for operations personnel are scheduled regularly to keep them informed of current oil-spill control techniques, sorbent materials, containment materials, protective clothing, equipment, etc. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

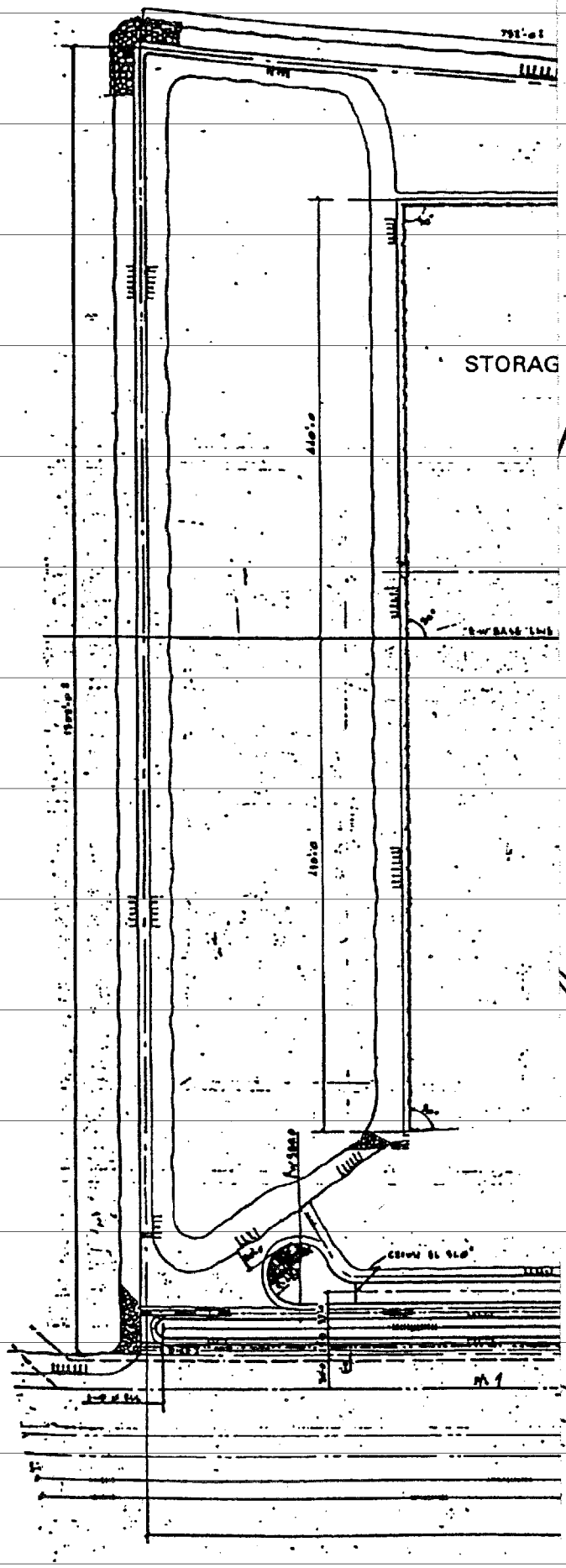
The training program outlines steps to be followed in alerting various company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C) and references (see Attachment E).

7.0 AMENDMENT OF SPCC
(40 CFR Section 112.5)

This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operations or maintenance which affects the facility's potential for the discharge of oil into state waters or navigable waters should be indicated by revision to the plan within six months of such change. All such reviews, evaluations and revisions to this plan shall be documented on Attachment D.

8.0 SPILL HISTORY AT THE FACILITY
(40 CFR Section 112.7(a))

Date	Volume Spilled	Cause and Cleanup
05/03/97	Small amounts	The spills are removed using sorbent material.



LEGEND

STORAGE AREA

DRAIN FLOW

REV.	DATE	DESCRIPTION	BY	CHK	APP	APP	APP
0	8/5/97	INITIAL ISSUE	FI	WEL	WEL	JKS	WEL

PORTLAND GENERAL ELECTRIC COMPANY
PORTLAND, OREGON

HARBORTON STORAGE YARD
SPCC - OIL SPILL CONTAINMENT
DRAINAGE PLAN

APPROVALS				DATE AUG. 5, 1997
BY FI	CHK WEL	DSGN JKS	APP WEL	

ATTACHMENT 'A'

ATTACHMENT B

HARBORTON STORAGE YARD

Number of Units	Number of Containers Per Unit	Equipment Unit Type	Volume Range of Oil/container (Gallons) (*See Note 1)	Description of Tank Design and Construction
STORAGE YARD NO.1 (Within security fence and alarmed)				
6	1	Transformers	3800 to 2700	Rectangular and/or oval steel tank
3	1	Transformers	2400 to 2100	Rectangular and/or oval steel tank
4	1	Transformers	1600 to 1100	Rectangular and/or oval steel tank
1	1	Transformer	700	Rectangular and/or oval steel tank
10	1	Regulators	800 to 500	Rectangular steel tank
5	1	Regulators	180	Rectangular steel tank
1	3	OCB	2000/tank	3 tanks/unit with circular steel case
2	3	OCB	200/tank to 70/tank	3 tanks/unit with circular steel case
5	1	OCB	45	Circular steel case
1	1	Tank	800	Circular steel tank 4' dia. X 9' long
1	1	Tank	11000	Circular fiberglass tank 10' dia. X 20' high
1	1	Tank	700	Circular fiberglass tank 4' dia. X 8' long
150	1	Drum	55	55 gallon steel drum
STORARAGE YARD NO.2 (Within security fence)				
3	1	Transformers	6700 to 6000	Rectangular and/or oval steel tank
4	1	Transformers	4800 to 4100	Rectangular and/or oval steel tank
2	1	Transformers	3700 to 1800	Rectangular and/or oval steel tank
3	1	Transformers	1100 to 800	Rectangular and/or oval steel tank
1	1	Tank	7000	Trailer tanker
1	1	Tank	7000	Circular steel tank 8' dia. X 20' long
1	1	Tank	10000	Circular steel tank 8' dia. X 30' long
10	1	Drum	55	55 gallon steel drum

ATTACHMENT B

HARBORTON STORAGE YARD (continued)

STORAGE YARD NO.3
(Within security fence)

1	1	Tank	10000	Circular steel tank 8' dia. X 30' long

STORAGE YARD NO.4
(Within the steel tank structure)

41	1	Drum	55	55 gallon drum (contain dry product)

NOTES:

1. * Denotes listed equipment and tanks may contain varying amounts of oil.

2. Inventory of equipment listed was performed August 1,1997.

(ATTACHMENT C)
OIL SPILL CONTINGENCY PLAN
(40 CFR Section 112.7(d)(1))

A copy of the Contingency Plan is kept on file at the Harborton Storage Yard at two locations shown on Attachment "A". In addition to this Contingency Plan, procedural guides outlining the steps to be followed in the reporting of any oil discharge to the System Control Center are conspicuously attached to an inside wall of the transformer shop bulletin board.

A copy of the plan is on file with the Environmental Services Department and the original copy is kept on record in the System Engineering Department. Additionally, the Facilities Department is supplied a copy of the SPCC Plan.

A procedural guide is also kept at the Repair Desk outlining the steps to be taken by that office in notifying the Landscape Services Department.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center at 464-8343 of the following conditions:

   a. **The facility name.**

   b. **Location.**

   c. **Equipment from which the oil discharge originated.**

   d. **An approximation of direction and quantity of flow.**

   e. **Required time of response.**

B. Action to be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and the Harborton Storage Yard Manager's office or the designated representative per Harborton Storage Yard's Emergency Call-Out Procedure. See References Attachment E Section 1 for the PGE Oil Spill Cleanup Procedure.

C. Action to be Taken by Harborton Storage Yard Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. **Action to be Taken by Environmental Services Department**
Report oil spill to regulatory agencies if necessary.

E. **Containment and Removal of Discharged Oil and Contaminated Debris**

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (800) 334-0004.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials, sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact Environmental Services for a manifest number.

6. Removal of waterborne oil and contaminated waste will be accomplished by Landscape Services or an approved contractor. Contaminated materials are to be disposed of in accordance with State of Oregon Department of Environmental Quality regulations.

F. **Follow-Up Report**

1. Environmental Services will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

(ATTACHMENT D)

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR HARBORTON STORAGE SITE

Revisions

SUPV	ENGR	DATE	BY	DESCRIPTION	CHK	APPR

REFERENCES
(ATTACHMENT E)

SECTIONS

1) PGE's Oil Spill Cleanup Procedure

2) System Load Dispatch Oil/PCB Discharge

3) Portland General Electric Oil Spill Report - Form (1058)

4) PGE Report For Transporting Electrical Equipment Or Material - Form (0080)

5) Emergency Response Plan Information (See Training Program)

(ATTACHMENT F)

DEFINITION OF SPILL EVENT:

THE FOLLOWING SPILL IS NOT A "SPILL EVENT" per Federal Regulations

- A spill that occurs on PGE's property
  AND
- PGE's personnel are aware of it
  AND
- Occurs on surfaces impervious to the substance spilled
  AND
- Is fully contained
  AND
- Is completely cleaned up with no further incident.

IF ANY OF THE ABOVE DO NOT APPLY
ANY OF THE FOLLOWING **IS A "SPILL EVENT":**

- SPILLED OIL WHICH ENTERS OR THREATENS WATERS in harmful quantities (sufficient to cause a film, iridescent appearance or discoloration of surface or shoreline of waters or cause sludge or oily deposits, oil with any quantity of PCBs) ...

OR GREATER THAN 42 GALLONS OF SPILLED OIL that does not threaten to enter waters of the State of Oregon or ※navigable waters※

OR SPILLED OIL WITH A PCB CONCENTRATION GREATER THAN 50 ppm that involves grazing land, vegetable gardens, surface water, sewers, ground water or drinking water

OR SPILLED OIL WITH GREATER THAN ONE POUND OF PCBs (for example an approximate 2600 gallon spill of oil containing 50 ppm PCBs)

OR A HAZARDOUS MATERIAL RELEASE in such quantities that facility personnel cannot contain it on PGE's property and outside assistance is required to prevent or mitigate a release of reportable quantities (as defined in 40 CFR 302) to the environment.

Portland General Electric Company

121 SW Salmon
Portland OR 97204

IF A SPILL HAS OCCURRED, PROCEED TO ATTACHMENT "C" FOR IMMEDIATE ACTIONS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

Implementation Date of Plan: October 9, 1985
Last Plan Review Date: February 23, 1999
Site Plan For: **HARBORTON SUBSTATION**

This Plan is being fully implemented under Portland General Electric's management approval and direction. The Plan is subject to amendment when there is a change in facility design, construction, operation or maintenance and as site conditions, legislation, and prevention technology require. Current copies of this Plan must be readily available. (40 CFR Sections 112.3 & 112.5 (1994))

TABLE OF CONTENTS

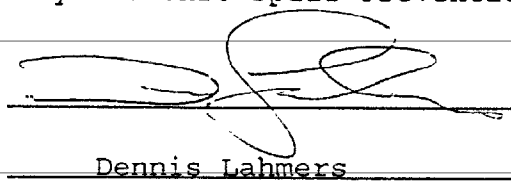
SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "A"

Various Substation Properties

Portland General Electric Company
121 S.W. Salmon St.
Portland, OR 97204
(503) 464-8820

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature 

Name Dennis Lahmers

Title Manager, EM&C

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN
CERTIFICATION FORM "B"

Facility:

Portland General Electric Company
Harborton Substation
12500 NW Marina Way
Portland, Oregon
(503) 650-1405 (Dispatch Desk Oregon City)

Owner:

Portland General Electric Company
121 SW Salmon Street
Portland, OR 97204
(503) 464-8521 (Environmental Services Dept.)

Implementation Date: 10/9/1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices. (40 CFR Part 112.3(d))

Signature William E. Lawson

Name **William E. Lawson**

Professional Engineer Registration No. **9682**

State **Oregon**

Date **February 23, 1999**

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A regional and local map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Substation is located approximately 300 feet from the Willamette River. A dike separates the substation from the river. The surface runoff is drained from the site to a ditch west of the yard that flows northerly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITION OF THE SITE

The substation yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known. The substation yard is protected from erosion by 8 inch thick 3/4-inch minus crushed rock. Oil spill penetration into the soil is estimated to be 12 inches to 24 inches before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The substation yard is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irregular shape property area totaling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY
(40 CFR Part 112.7(c))

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 7.28 pounds per gallon and a specific gravity of 0.874. The minimum flash point is 145 C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@100 C..... 3.0/36sec
@ 40 C..... 12.0/66sec
@ 0 C..... 76.0/350 sec

The containment vessels of concern are pole mounted transformers (station transformers), pad mounted transformers, oil circuit beakers, regulators and other oil filled electrical equipment. The individual container capacity (gallons), failure flow-rate (maximums gallons per minute), and fail-safe engineering features very depending on the type and size of the unit. See Attachment B.

Units in the substation yard are energized. Thus, these units may spill oil as a result of an electrical fault in the unit. Should a unit be dropped or punctured during maintenance operations, spilled oil is immediately cleanup.

The direction of flow from the containers are shown in Attachment A.

2.2 POTENTIAL CAUSES FOR OIL DISCHARGES

This SPCC Plan addresses the control of all oil discharges from routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of oil released and the extent of environmental pollution possible.

The probable causes of routine operations and catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur should the equipment be damaged while moving or loading the equipment onto a truck for shipment. Transformer oil could be spilled during equipment servicing and maintenance operations at this substation.

- **Spills From Servicing Equipment** - Oil loss during filling or emptying of the container will be approximately 25 gallons before shutoff can occur, if hose-fitting failure occurs. Upon noticing the discharge or spill, the maintenance crew or operator

will close the container valve and shut down the pump. Cleanup operation, in accordance with the Oil Spill Contingency Plan (see Attachment C), will be initiated.

- **Operation** - Cooling radiators and other equipment through which oil flows can develop leaks, PGE's good housekeeping practices require that the ground under such leaks be cleaned up and protected from further contamination and that the leaking part be repaired by maintenance crews. Any contaminated material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by internal pressure buildup resulting from electric arcing deep in the vessel. This occurs faster than relief valves can reduce the pressure. The result is tank rupture. Vandalism or acts of sabotage may also result in catastrophic tank failure.

- **Transformers** - Up to two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil leaking from defective gaskets or punctures in the container.
- **Circuit Breakers** - Catastrophic failure of these devices may cause most of the oil to discharge immediately, If tank failure does not occur, venting could release minor amounts of oil.
- **Oil Switches and Miscellaneous Vessels** - Catastrophic failure of these items may cause the entire contents to be discharged immediately; however, these items have a volume generally less than 50 gallons.

2.3 METHOD OF DETECTING OIL DISCHARGES

Incidental leaks, drips and small spills will be noted during regular maintenance checks. If a failure occurs at a transmission or distribution substation, PGE System Control Center (SCC) is notified promptly of the failure by outage reports from customers. Emergency maintenance crews are dispatched immediately to the substation. If the emergency maintenance crew see oil spilled on site they will notify SCC of the event. Large spills will activate the Oil Spill Contingency Plan (Attachment C).

3.0 SECONDARY CONTAINMENT SYSTEM
(40 CFR Part 112.7(c))

This site is not equipped with any oil spill containment to protect against the unlikely event of an oil spill. The storm water flows to the ground or into a nearby storm drain ditch located out side the fenced area. This storm drain ditch flows into the Willamette River. The substation yard area is covered with six to eight inches of one inch minus crushed rock. See Attachment A.

4.0 CLEANUP PROCEDURES
(40 CFR Part (e)(2)(x))

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control, stop the flow and remove the oil are given in this plan. A spill kit is on site which contains tools, personal protective products, sorbant materials and forms for documenting a spill event.

5.0 SITE SECURITY AND CONTROL
(40 CFR Part 112.7(e)(9))

An 8-foot high metal security fence with gates surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

In the unlikely event of a spill, additional security of off-site areas affected by a spill will be established by operations personnel using barrier tape in the cleanup kit, traffic cones, etc. to designate the exclusion zone.

6.0 PERSONNEL TRAINING AND COMMUNICATION
(40 CFR Part 112.7(e)(10))

Briefings for operations personnel are scheduled regularly to keep them informed of current oil-spill control techniques, sorbant materials, containment materials, protective clothing, equipment, etc. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C) and references (see Attachment E).

7.0 INSPECTION AND RECORDS
(40 CFR Part 112.5)

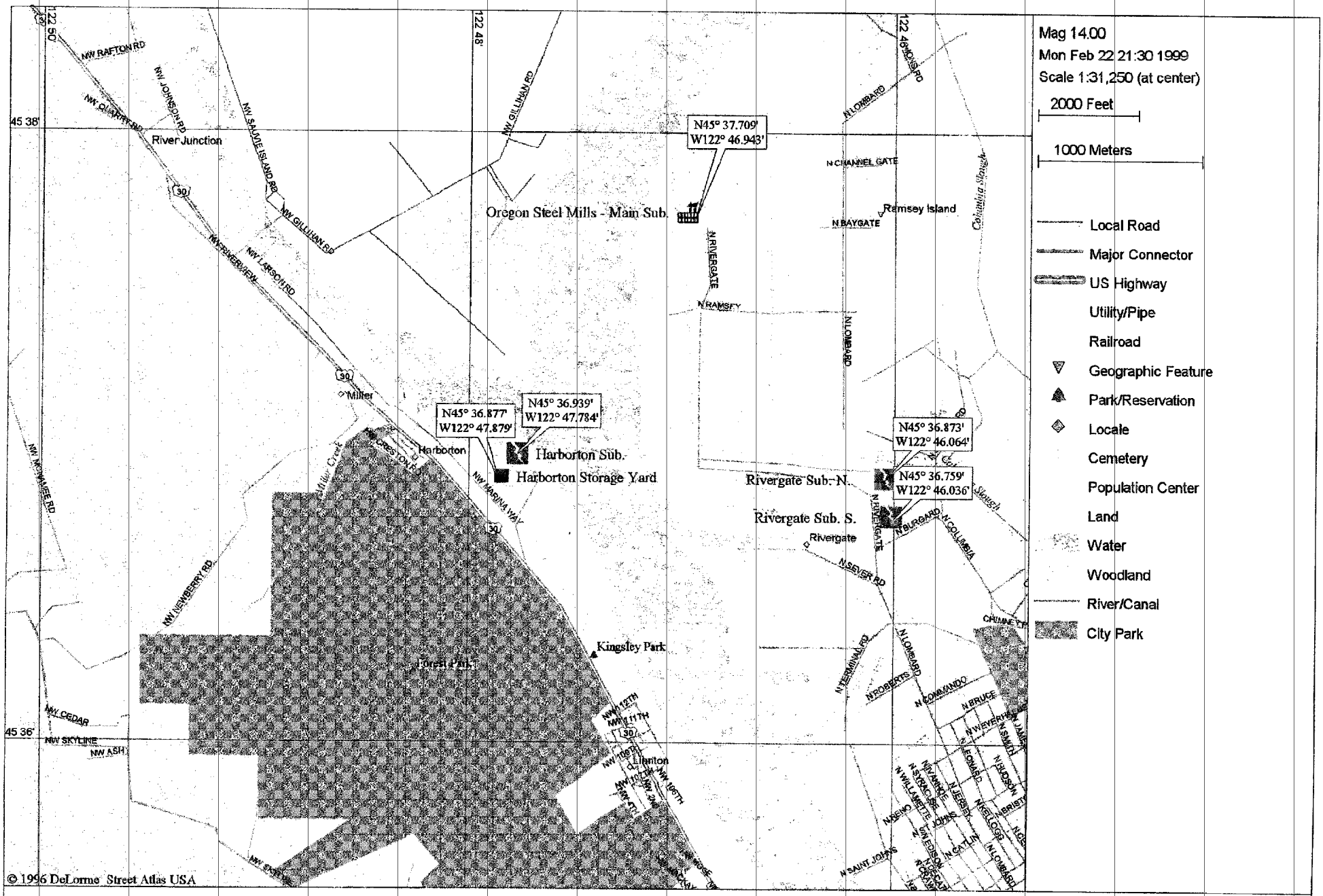
This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operation, or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. The Engineer shall review site modifications and additions. The SPCC Plan shall be reviewed, updated and signed by the Engineer and Owner's Manager as required in (40 CFR Sections 112.3 & 112.5 (1996)).

All modifications to the existing facility and its structures or to the areas exterior to the site which do not modify drainage shall be noted on Attachment D. Replacement of non-oil filled equipment or removal of oil filled equipment.

8.0 SPILL HISTORY AT THE FACILITY
(40 CFR Part 112.7(a))

NOTES: Record minor and major oil spills at this facility.

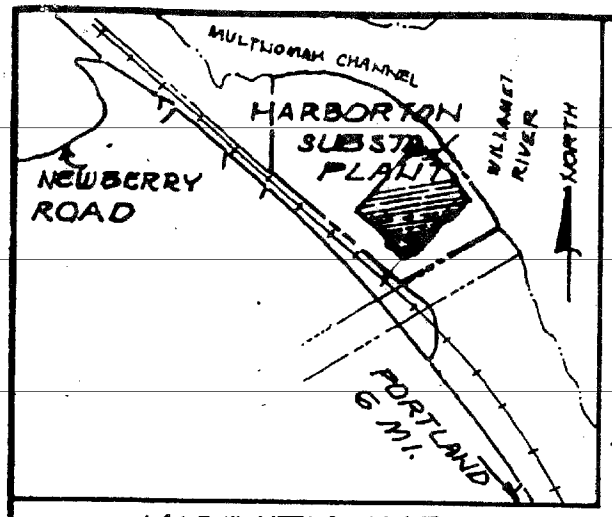
Date	Volume Spilled	Cause and Cleanup



Harborton Sub -12500 NW Marina Way -Portland -Multnomah Co

PGE0044757

ATTACHMENT A



VICINITY MAP

WILLAMETTE R.

N

SCALE: 1"=400'

PROPERTY LINE

DIKE

DIKE

550'

930

MICROWAVE TOWER

GAS TURBINES

TRANSF.

SUB STATION AREA

SWITCH YARD AREA

STORAGE TANKS

OCB(2)

350'

20'

160'

MARINE WAY

LOWER COLUMBIA RIVER HWY.

PORTLAND GENERAL ELECTRIC CO. PORTLAND, OREGON		
HARBORTON SUBSTATION		
SCALE		DATE AUG. 14, 1985
DRAWN BY	TRACED BY	CHECKED
JAV		RVB
APPROVED		
DRG. NO.		

Number of Units	Number of Containers per Unit	Equipment Unit Type	Volume of Oil /container (Gallons)	Overland Flow Rate from Container (gpm)	Description of Tank Design and Construction	Fail-Safe Engineering Features
2	1	OIL BRKR DIST	55	10	Circular steel tank w/round steel top & flat bottom. 2'D x 2.5' H	Vent Pipe
1	1	OIL BRKR DIST	76	10	Rectangular steel tank w/skid mtd. base 2.5' x 5' x 7'H	Vent Pipe
1	1	TRANSFMR LTC	6483	575	Rectangular steel tank w/flat plate base. 6' x 14' x 13'H	Pressure Relief Valve

Note: Containers of less than 40 gal. capacity may not be listed.

DISTRICT: C SUBSATION EQUIPMENT LISTED BY LOCATION LOCATION: HARBORTON

NBR ST.CD	POS.	EQUIPMENT DESC	MAN YR CD MD	EQUIPMENT TYPE	LTC/BRKR MECHANISM	SERIAL NBR.	FAULT MVA/KA	RATINGS KVA	KV	AMPS	GALLS OIL	SAMP DATE	PCB LEVEL (PPM) TK 1	TK 2	TK 3	INST JOB	PURCH ORDER	INST DATE	ASSET/ MAINT
78 U	H152	OIL BRKR TRAN	MG 72	AHJ-54-115-10	0A4	20512		10000	115.0	2000	2160		25	3	3	5544	57301		TT
		REMARK : 2-16-82 COPPER EXPANSIONS 2-37-370. STUDE CONNECTORS 1-54-830.																	
79 U	H162	OIL BRKR TRAN	MG 72	AHJ-54-115-10	0A4	20511		10000	115.0	2000	2160		0	0	0	5544	57301		TT
		REMARK : CLOSING COIL M2425. 02/02/93 - AFTER CHANGING SHIMS ON PILOT VALVE --GOT 5 SHOTS. FOUND CENTER TANK TIMING PLUG MISSING ON TOP, HAD TO REP																	
80 U	H114	OIL BRKR TRAN	MG 72	AHJ-54-115-10	0A4	20513		10000	115.0	2000	2160		2	2	2	5544	57301		TT
		REMARK : 5-20-86 USE PARTS FROM H-122 PER NORMINE (SPARE BREAKER).--02/09/93- CORRECTED PROB WITH STICKY LATCH VALVE, REPLACED HIGH PRESSURE HYD.																	
81 U	H138	OIL BRKR TRAN	MG 72	AHJ-54-115-10	0A4	20514		10000	115.0	2000	2160		-5	-5	-5	5544	57301		TT
		REMARK : 10/01/93-INSTALLED NEW COUNTER																	

CON
CON

154
154

DISTRICT: C SUBSATION EQUIPMENT LISTED BY LOCATION LOCATION: HARBORTON EAST

NBR ST.CD	POS.	EQUIPMENT DESC	MAN YR CD MD	EQUIPMENT TYPE	LTC/BRKR MECHANISM	SERIAL NBR.	FAULT MVA/KA	RATINGS KVA	KV	AMPS	GALLS OIL	SAMP DATE	PCB LEVEL (PPM) TK 1	TK 2	TK 3	INST JOB	PURCH ORDER	INST DATE	ASSET/ MAINT
45 U	HR3	TRANSFMR LTC	NH 72	OA	UTT-A70/B	RDP-38974		16800	123.3		6483		3			5544	58504		DD
		REMARK : PCB RESULT LTC 09/84.1C OG KV BIL 10KV FW RF 1.5. SHIP WT 74450.328 GAL OIL REQUIRED FOR RADIATORS. 4025 GAL OIL REQUIRED FOR CORES																	
42 U	R346	OIL BRKR DIST	IT 69	14.4KS-500-12	SE-31A	41-10279-6021		500	14.4	1200	76		10			4191	27606		DD
		REMARK : FIELD CHECKED 10-84. SPARE PARTS: CODE 2-16-660 THRU 2-16-686.																	
65 U	R338	OIL BRKR DIST	AC 70	SDO-15-500	SE-3B	36467-1		18	14.4	1200	55		7			4853	31903		DD
		REMARK : NO LABELS ON BUSHINGS. **OH'D ON 9/19/96, WO # 8400.																	
66 U	R334	OIL BRKR DIST	AC 70	SDO-15-500	SE-3B	36467-2		18	14.4	1200	55		15			4853	31903		DD
		REMARK : FIELD CHECKED 10-84. **OH'D ON 4/14/98 ON WO#13837																	

(ATTACHMENT C)

OIL SPILL CONTINGENCY PLAN

(40 CFR Part 112.7(d)(1))

A copy of the Contingency Plan is kept on file at the Control House at the location shown on Attachment"A" and at EM&C Headquarters. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in reporting any oil discharge to the System Control Center are conspicuously attached to an inside wall of the Control House.

A copy of this plan is on file with the Environmental Services Department and the original copy is kept on record in the System Engineering Department. Additionally, the System Control Center is supplied a copy of the SPCC Plan.

A procedural guide is also kept at the Repair Desk outlining the steps to be taken by that office in notifying the Landscape Services Department should oil spill beyond the substation fencing.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.
2. Notify the System Control Center at 464-8343 of the following conditions:
   a. **The facility name.**
   b. **Location.**
   c. **Equipment from which the oil discharge originated.**
   d. **An approximation of direction and quantity of flow.**
   e. **Required time of response.**

B. Action to be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and EM&CHeadquarter's Dispatch Desk or the designated representative perEM&C's Emergency Call-Out Procedure. See References Attachment E Section 1 for the PGE Oil Spill Cleanup Procedure.

C. Action to be Taken by the EM&C Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Report oil spill to regulatory agencies if necessary.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (800) 334-0004.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials, sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact Environmental Services for a manifest number.

6. Removal of waterborne oil and contaminated waste will be accomplished by EM&C Crews and/or Landscape Services or an approved contractor. Contaminated materials are to be disposed of in accordance with State of Oregon Department of Environmental Quality regulations.

F. Follow-Up Report

1. Environmental Services will prepare a complete report for the Environmental Services Department for subsequent submission to the Environmental Protection Agency and the State of Oregon Department Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed following the oil discharge incident.

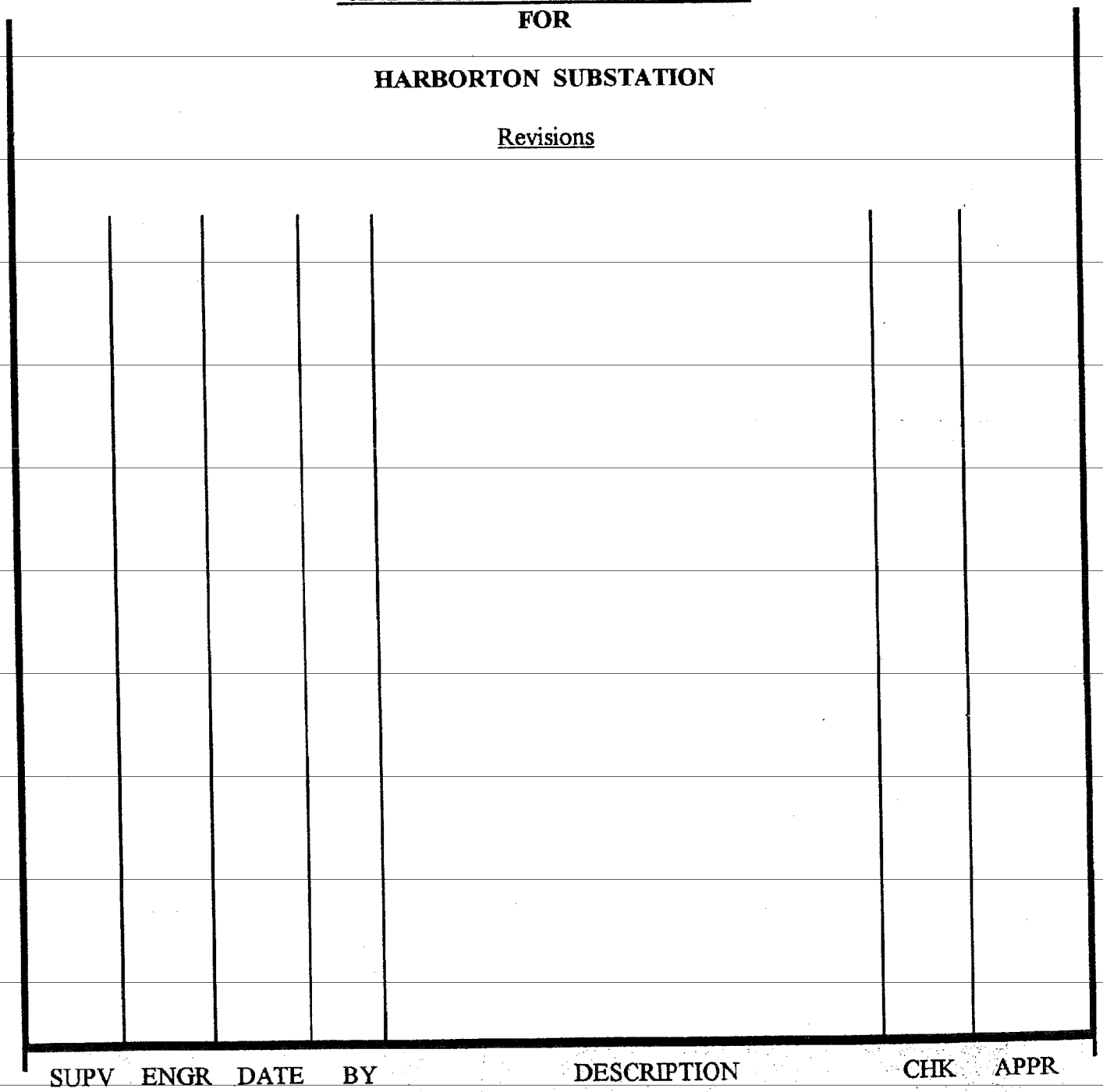
2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

ATTACHMENT D

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR

HARBORTON SUBSTATION

Revisions



(ATTACHMENT E)
REFERENCES

SECTIONS:

1) PGE's Oil Spill Cleanup Procedure

2) System Load Dispatch Oil/PCB Discharge

3) Portland General Electric Oil Spill Report - Form (1058)

4) PGE Report For Transporting Electrical Equipment Or Material - Form (0080)

5) Emergency Response Plan Information (See Training Program)

(ATTACHMENT F)

THE FOLLOWING SPILL IS NOT A "SPILL EVENT" per Federal Regulations

- A spill that occurs on PGE's property
  AND
- PGE's personnel are aware of it
  AND
- Occurs on surfaces impervious to the substance spilled
  AND
- Is fully contained
  AND
- Is completely cleaned up with no further incident.

IF ANY OF THE ABOVE DO NOT APPLY
ANY OF THE FOLLOWING IS A "SPILL EVENT":

- SPILLED OIL WHICH ENTERS OR THREATENS WATERS in harmful quantities (sufficient to cause a film, iridescent appearance or discoloration of surface or shoreline of waters or cause sludge or oily deposits, oil with any quantity of PCBs) ...

OR GREATER THAN 42 GALLONS OF SPILLED OIL that does not threaten to enter waters of the State of Oregon or "navigable waters"

OR SPILLED OIL WITH A PCB CONCENTRATION GREATER THAN 50 ppm that involves grazing land, vegetable gardens, surface water, sewers, ground water or drinking water

OR SPILLED OIL WITH GREATER THAN ONE POUND OF PCBs (for example an approximate 2600 gallon spill of oil containing 50 ppm PCBs)

OR A HAZARDOUS MATERIAL RELEASE in such quantities that facility personnel cannot contain it on PGE's property and outside assistance is required to prevent or mitigate a release of reportable quantities (as defined in 40 CFR 302) to the environment

ATTACHMENT G

INSPECTIONS, TESTS, AND RECORDS

Site specific information acquired by Portland General Electric personnel pertaining to site inspections, electrical equipment inspections, sample data, chain of custody, lab test results, maintenance records and specifications on oil filled electrical equipment is on file with EM&C at the Oregon City Office.

PORTLAND GENERAL ELECTRIC COMPANY

121 S. W. Salmon
Portland, Oregon 97204

IF A SPILL HAS OCCURRED,
PROCEED TO ATTACHMENT "C" FOR
IMMEDIATE ACTIONS

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN

Implementation Date of Plan: 10/09/1985

Site Plan For: **Harborton Storage Yard**

Latest Revision Date for Plan: **07/20/2000**

This Plan is being fully implemented under PGE management approval and direction. The Plan is subject to amendment as site conditions, legislation, and prevention technology require. Current copies of this Plan must be kept readily available. (40 CFR Sections 112.3 & 112.5 (1999))

TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "A"

Various Substation Properties

Portland General Electric Company
121 S.W. Salmon St.
Portland, OR 97204
(503) 464-8820

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature _____

Name Dennis Lahmers

Title Manager, EM&C

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN
CERTIFICATION FORM "B"

Facility:

Portland General Electric Company
Harborton Storage Yard
12430 St. Helens Road
Portland, Oregon
(503) 650-1405 (Repair Desk Oregon City)

Owner:

Portland General Electric Company
121 SW Salmon St
Portland, OR 97204
(503) 464-8521 (Environmental Services Dept.)

Implementation Date: 10/09/1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices. (40 CFR Section 112.3(d))

Signature William E. Lawson

Name William E. Lawson

Professional Engineer Registration No. 9682

State Oregon

Date July 20, 2000

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Storage Yard is located approximately 300 feet from the Willamette River. A dike separates the Storage Yard form the river which is "navigable waters". The surface runoff is drained from the site to a ditch west of the yard that flows northerly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITIONS OF THE SITE

The Storage Yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known, The Storage Yard is protected from erosion by 8 inch thick 3/4 inch minus crushed rock. Oil spill penetration into the soil is estimated to be one to two feet before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irrgular shape property area totalling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY
(40 CFR Part 112.2)

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

2.1.1 Oil Used in Electrical Equipment

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 6.882 pounds per gallon and a specific gravity of 0.920. The minimum flash point is 145°C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@100°C..... 3.0/36 sec
@ 40°C..... 12.0/66 sec
@ 0°C..... 76.0/350 sec

The containment vessels of concern containing the above oil are lectrical equipment such as pole mounted transformers, pad mounted transformers, regulators, tanks, and other oil filled electrical equipment and tanks. The individual container capacity (gallons), failure flow-rate (maximums gallons per minute), and fail-safe engineering features very depending on the type and size of these oil fill electrical units. Electrical units stored in the yard areas are not energized. Thus, these units will not spill oil as a result of an electrical fault in the unit.

Should oil spill result from an accident, the oil would flow into the sandy soil. A small volume of spilled oil (approximately 20 to 30 gallons) would be contained in the the sandy soil. Larger volumes of spilled oil (above 25 gallons) that exceed the capacity of the soil would reach ground water.

Several substation type transformers are stored in this section of the yard. A sand berm is used as containment in the east section of the storage yard area.

2.1.2 Oil Filled Electrical Equipment

Other pole mounted transformers are stored on the north side of the service center yard. These units are not energized. Thus, these units will not spill oil as a result of an electrical fault. Should a unit be broken open, the oil will spill out in the direction of a catch basin in the yard.

Transformers and other oil filled equipment with the known level of PCB in the oil are not stored in the yard area. When small leaking oil filled units are shipped to this site, they are placed in bags and placed in a pan. A plastic cover is

placed over the units to protect against rain.

However, should a unit be dropped or punctured, any spilled oil is immediately cleanup. The direction of flow from the transformer storage areas is shown in Attachment A.

Large pad mounted transformers are stored on the grounds of the storage area yard. These units are not energized. Thus, these units will not spill oil as a result of an electrical fault. Should a unit be broken open, the oil will spill out in a downward direction into the yard soil. See Attachment "A".

2.1.3 Storage Tanks

Several storage tanks are in service at the storage yard and contain transformer oil. The oil is the same as described in section 2.1 above.

The skid tanks are steel structures which are designed to be loaded on to trucks for transport to substations under maintenance. Each tank contains up to 10,000 gallons of transformer oil.

2.2 POTENTIAL CAUSES FOR OIL OR FUEL DISCHARGES

This SPCC Plan addresses the control of all oil and fuel discharges from routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of hydrocarbons released and the extent of environmental pollution possible.

The probable causes of a spill during routine operations or a catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur should the equipment be damaged while moving units from one area to another or loading an electrical oil filled unit onto or off of a truck. A fueling nozzles malfunction or an oil transfer hose failure can also be a source of a fuel or oil spill.

- **Spills From Equipment or Tanks** - Oil loss during transfer operations or moving the containers resulting from dropping a unit will be approximately 5 to 50 gallons. Upon noticing the discharge or spill, the maintenance or operation crew will initiate cleanup operation in accordance with the Oil Spill Contingency Plan (see Attachment C).
- **Operation** - Transformer brought in from the field for repair or disposal may have oil leaks. These leaking transformers are placed into steel trays. The leaking part is sealed by maintenance crews. Any contaminated

material will be removed and disposed of at a state-approved landfill.

2.2.2 **Catastrophic Failure**

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by dropping the unit or puncturing the vessel. Vandalism or acts of sabotage may also result in catastrophic tank failure.

-**Transformers** - Up to two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil leaking from defective gaskets or punctures in the container.

-**Tanks** - Containment is provided for the volume of the largest tank in the containment area. Should a valve be broken or opened as an act of vandalism or sabotage, the containment will hold the contents of the largest unit.

2.3 METHOD OF DETECTING OIL DISCHARGES

The Harborton Storage Yard is an unmanned site. Routine patrol of the site is conducted during off hours. Visual inspection provides detection at all locations. Incidental leaks and small spills will be handled by trained maintenance crews. Large spills will activate the Oil Spill Contingency Plan (Attachment C).

3.0 SECONDARY CONTAINMENT SYSTEM
(40 CFR Section 112.7(c))

This site has minimal oil spill containment sand berms installed in the east stoage yard to protect against the unlikely event of an oil spill. The containment structures are designed to stop spilled oil from entering the surface water of nearby wet lands. The west yard is not equipped with oil spill containment. See Attachment A.

4.0 CLEANUP PROCEDURES
(40 CFR Section 112.7(e)(2)(x))

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control, stop the flow and remove the oil are given in this plan.

5.0 SITE SECURITY AND CONTROL
(40 CFR Section 112.7(e)(9))

An 8-foot high metal security fence with gates surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

In the unlikely event of a spill, additional security of off-site areas affected by a spill will be established by operations personnel using barrier tape, traffic cones, etc. to designate the exclusion zone.

6.0 PERSONNEL TRAINING AND COMMUNICATION
(40 CFR Section 112.7(e)(10))

Briefings for operations personnel are scheduled regularly to keep them informed of current oil-spill control techniques, sorbent materials, containment materials, protective clothing, equipment, etc. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

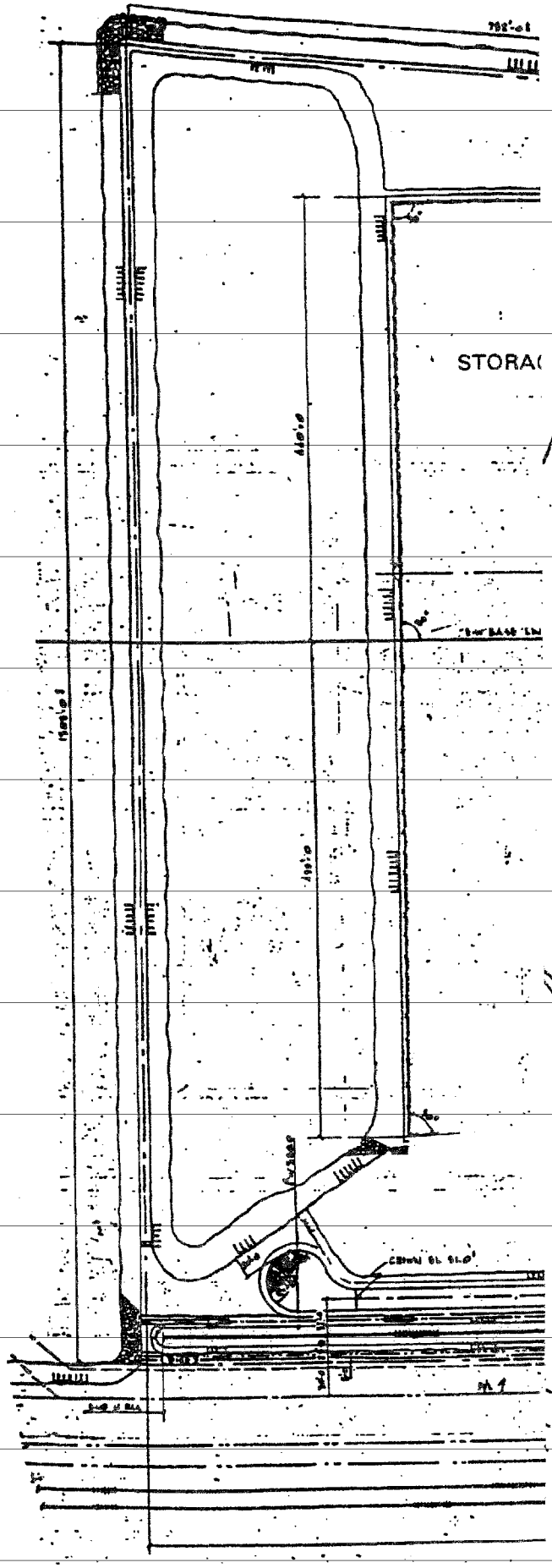
The training program outlines steps to be followed in alerting various company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C) and references (see Attachment E).

7.0 AMENDMENT OF SPCC
(40 CFR Section 112.5)

This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operations or maintenance which affects the facility's potential for the discharge of oil into state waters or navigable waters should be indicated by revision to the plan within six months of such change. All such reviews, evaluations and revisions to this plan shall be documented on Attachment D.

8.0 SPILL HISTORY AT THE FACILITY
(40 CFR Section 112.7(a))

Date	Volume Spilled	Cause and Cleanup
05/03/97	Small amounts	The spills are removed using sorbent material.



LEGEND

STORAGE AREA

DRAIN FLOW

0 REV.	8/5/97	INITIAL ISSUE	FI	WEL	WEL	JK9	WEL	

PORTLAND GENERAL ELECTRIC COMPANY
PORTLAND, OREGON

HARBORTON STORAGE YARD
SPCC - OIL SPILL CONTAINMENT
DRAINAGE PLAN

APPROVALS		DATE AUG. 5, 1997	
BY FI	CHK WEL	ENGR JK9	APPR WEL

ATTACHMENT 'A'

ATTACHMENT B

HARBORTON STORAGE YARD

Number of Units	Number of Containers Per Unit	Equipment Unit Type	Volume Range of Oil/container (Gallons) (*See Note 1)	Description of Tank Design and Construction
STORAGE YARD NO.1 (Within security fence and alarmed)				
6	1	Transformers	3800 to 2700	Rectangular and/or oval steel tank
3	1	Transformers	2400 to 2100	Rectangular and/or oval steel tank
4	1	Transformers	1600 to 1100	Rectangular and/or oval steel tank
1	1	Transformer	700	Rectangular and/or oval steel tank
10	1	Regulators	800 to 500	Rectangular steel tank
5	1	Regulators	180	Rectangular steel tank
1	3	OCB	2000/tank	3 tanks/unit with circular steel case
2	3	OCB	200/tank to 70/tank	3 tanks/unit with circular steel case
5	1	OCB	45	Circular steel case
1	1	Tank	800	Circular steel tank 4' dia. X 9' long
1	1	Tank	11000	Circular fiberglass tank 10' dia. X 20' high
1	1	Tank	700	Circular fiberglass tank 4' dia. X 8' long
150	1	Drum	55	55 gallon steel drum
STORARAGE YARD NO.2 (Within security fence)				
3	1	Transformers	6700 to 6000	Rectangular and/or oval steel tank
4	1	Transformers	4800 to 4100	Rectangular and/or oval steel tank
2	1	Transformers	3700 to 1800	Rectangular and/or oval steel tank
3	1	Transformers	1100 to 800	Rectangular and/or oval steel tank
1	1	Tank	7000	Trailer tanker
1	1	Tank	7000	Circular steel tank 8' dia. X 20' long
1	1	Tank	10000	Circular steel tank 8' dia. X 30' long
10	1	Drum	55	55 gallon steel drum

ATTACHMENT B

HARBORTON STORAGE YARD (continued)

STORAGE YARD NO.3
(Within security fence)

1	1	Tank	10000	Circular steel tank 8' dia. X 30' long

STORAGE YARD NO.4
(Within the steel tank structure)

41	1	Drum	55	55 gallon drum (contain dry product)

NOTES:

1. * Denotes listed equipment and tanks may contain varying amounts of oil.

2. Inventory of equipment listed was performed August 1,1997.

(ATTACHMENT C)
OIL SPILL CONTINGENCY PLAN
(40 CFR Section 112.7(d)(1))

A copy of the Contingency Plan is kept on file at the Harborton Storage Yard at two locations shown on Attachment "A". In addition to this Contingency Plan, procedural guides outlining the steps to be followed in the reporting of any oil discharge to the System Control Center are conspicuously attached to an inside wall of the transformer shop bulletin board.

A copy of the plan is on file with the Environmental Services Department and the original copy is kept on record in the System Engineering Department. Additionally, the Facilities Department is supplied a copy of the SPCC Plan.

A procedural guide is also kept at the Repair Desk outlining the steps to be taken by that office in notifying the Landscape Services Department.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. **Immediate Action to be Taken if Company Personnel Are on Site**

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center at 464-8343 of the following conditions:

   a. **The facility name.**

   b. **Location.**

   c. **Equipment from which the oil discharge originated.**

   d. **An approximation of direction and quantity of flow.**

   e. **Required time of response.**

B. **Action to be Taken by System Control Center Upon Notification of Oil Discharge**

The System Control Center will immediately notify the Environmental Services Department and the Harborton Storage Yard Manager's office or the designated representative per Harborton Storage Yard's Emergency Call-Out Procedure. See References Attachment E Section 1 for the PGE Oil Spill Cleanup Procedure.

C. **Action to be Taken by Harborton Storage Yard Manager's Office**

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Report oil spill to regulatory agencies if necessary.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (800) 334-0004.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials, sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact Environmental Services for a manifest number.

6. Removal of waterborne oil and contaminated waste will be accomplished by Landscape Services or an approved contractor. Contaminated materials are to be disposed of in accordance with State of Oregon Department of Environmental Quality regulations.

F. Follow-Up Report

1. Environmental Services will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.5.

(ATTACHMENT D)

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR HARBORTON STORAGE SITE

Revisions

SUPV	ENGR	DATE	BY	DESCRIPTION	CHK	APPR

REFERENCES
(ATTACHMENT E)

SECTIONS

1) PGE's Oil Spill Cleanup Procedure

2) System Load Dispatch Oil/PCB Discharge

3) Portland General Electric Oil Spill Report - Form (1058)

4) PGE Report For Transporting Electrical Equipment Or Material - Form (0080)

5) Emergency Response Plan Information (See Training Program)

(ATTACHMENT F)

DEFINITION OF SPILL EVENT:

THE FOLLOWING SPILL IS NOT A "SPILL EVENT" per Federal Regulations

- A spill that occurs on PGE's property
  AND
- PGE's personnel are aware of it
  AND
- Occurs on surfaces impervious to the substance spilled
  AND
- Is fully contained
  AND
- Is completely cleaned up with no further incident.

IF ANY OF THE ABOVE DO NOT APPLY
ANY OF THE FOLLOWING **IS A "SPILL EVENT":**

- SPILLED OIL WHICH ENTERS OR THREATENS WATERS in harmful quantities (sufficient to cause a film, iridescent appearance or discoloration of surface or shoreline of waters or cause sludge or oily deposits, oil with any quantity of PCBs) ...

OR GREATER THAN 42 GALLONS OF SPILLED OIL that does not threaten to enter waters of the State of Oregon or navigable waters

OR SPILLED OIL WITH A PCB CONCENTRATION GREATER THAN 50 ppm that involves grazing land, vegetable gardens, surface water, sewers, ground water or drinking water

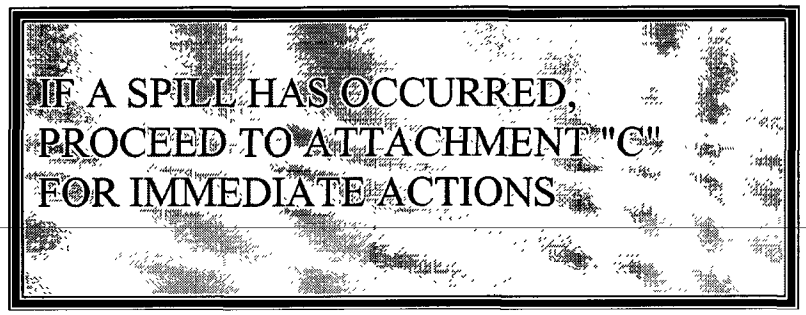
OR SPILLED OIL WITH GREATER THAN ONE POUND OF PCBs (for example an approximate 2600 gallon spill of oil containing 50 ppm PCBs)

OR A HAZARDOUS MATERIAL RELEASE in such quantities that facility personnel cannot contain it on PGE's property and outside assistance is required to prevent or mitigate a release of reportable quantities (as defined in 40 CFR 302) to the environment.

PORTLAND GENERAL ELECTRIC COMPANY

121 S. W. Salmon
Portland, Oregon 97204

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN



Site: Harborton Substation

Implementation Date of Plan: 10/09/1985

Latest Review and Evaluation Date for this SPCC Plan: 02/14/2003

Last Site Inspection: 02/07/2002

Current Substation Site Inspection Date: 02/14/2003 By WEL

This Plan is being fully implemented under **Portland General Electric (PGE)** management approval and direction. The Plan is subject to review and evaluation once every five years. As a result of this review and evaluation, the owner or operator shall amend the **SPCC Plan** within six months of the review. The reviewed SPCC Plan shall include more effective prevention and control technology if: (1) Such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Current copies of this Plan must be kept readily available.

(40 CFR Parts 112.3 & 112.5 (August 16, 2002))

TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "A"

Various Substation Properties

Portland General Electric Company
121 SW Salmon St.
Portland, OR 97204

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature _____

Name Dave Lamb

Title General Manager, EM&C

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN CERTIFICATION FORM "B"

Facility:

Portland General Electric Company
Harborton Substation
12500 NW Marina Way
Portland, Oregon 97231
(503) 464-8343 (Load Dispatch)

Owner:

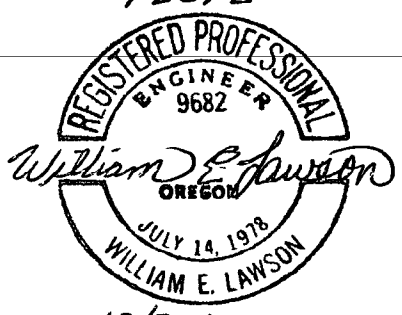
Portland General Electric Company
121 SW Salmon Street
Portland, OR 97204
(503) 464-8524 (Environmental Services Dept.)
(503) 464-8030 (Substation Engineering Dept.)

Implementation Date: 10/09/1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the **SPCC Plan** has been prepared in accordance with good engineering practices. (40 CFR Part 112.3(d))

1/22/2



12/31/02

Signature William E. Lawson

Name William E. Lawson

Professional Engineer Registration No. 9682

State Oregon

Date January 22, 2002

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A regional and local map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Substation is located approximately 300 feet from the Willamette River. A dike separates the substation from the river. The surface runoff is drained from the site to a ditch west of the yard that flows northerly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITION OF THE SITE

The substation yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known. The substation yard is protected from erosion by 8 inch thick 3/4-inch minus crushed rock. Oil spill penetration into the soil is estimated to be 12 inches to 24 inches before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The substation yard is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irregular shape property area totaling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY
(40 CFR Part 112.7(c))

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 7.28 pounds per gallon and a specific gravity of 0.874. The minimum flash point is 145 C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@100 C..... 3.0/36sec
@ 40 C..... 12.0/66sec
@ 0 C..... 76.0/350 sec

The containment vessels of concern are pole mounted transformers (station transformers), pad mounted transformers, oil circuit beakers, regulators and other oil filled electrical equipment. The individual container capacity (gallons), failure flow-rate (maximums gallons per minute), and fail-safe engineering features very depending on the type and size of the unit. See Attachment B.

Units in the substation yard are energized. Thus, these units may spill oil as a result of an electrical fault in the unit. Should a unit be dropped or punctured during maintenance operations, spilled oil is immediately cleanup.

The direction of flow from the containers are shown in Attachment A.

2.2 POTENTIAL CAUSES FOR OIL DISCHARGES

This SPCC Plan addresses the control of all oil discharges from routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of oil released and the extent of environmental pollution possible.

The probable causes of routine operations and catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur should the equipment be damaged while moving or loading the equipment onto a truck for shipment. Transformer oil could be spilled during equipment servicing and maintenance operations at this substation.

- **Spills From Servicing Equipment** - Oil loss during filling or emptying of the container will be approximately 25 gallons before shutoff can occur, if hose-fitting failure occurs. Upon noticing the discharge or spill, the maintenance crew or operator

will close the container valve and shut down the pump. Cleanup operation, in accordance with the Oil Spill Contingency Plan (see Attachment C), will be initiated.

- **Operation** - Cooling radiators and other equipment through which oil flows can develop leaks, PGE's good housekeeping practices require that the ground under such leaks be cleaned up and protected from further contamination and that the leaking part be repaired by maintenance crews. Any contaminated material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by internal pressure buildup resulting from electric arcing deep in the vessel. This occurs faster than relief valves can reduce the pressure. The result is tank rupture. Vandalism or acts of sabotage may also result in catastrophic tank failure.

- **Transformers** - Up to two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 70 percent of the discharge occurs immediately. If tank failure does not occur, minor oil discharges may result from oil leaking from defective gaskets or punctures in the container.
- **Circuit Breakers** - Catastrophic failure of these devices may cause most of the oil to discharge immediately, If tank failure does not occur, venting could release minor amounts of oil.
- **Oil Switches and Miscellaneous Vessels** - Catastrophic failure of these items may cause the entire contents to be discharged immediately; however, these items have a volume generally less than 50 gallons.

2.3 METHOD OF DETECTING OIL DISCHARGES

Incidental leaks, drips and small spills will be noted during regular maintenance checks. If a failure occurs at a transmission or distribution substation, PGE System Control Center (SCC) is notified promptly of the failure by outage reports from customers. Emergency maintenance crews are dispatched immediately to the substation. If the emergency maintenance crew see oil spilled on site they will notify SCC of the event. Large spills will activate the Oil Spill Contingency Plan (Attachment C).

3.0 SECONDARY CONTAINMENT SYSTEM

(40 CFR Part 112.7(c))

This site is not equipped with any oil spill containment to protect against the unlikely event of an oil spill. The storm water flows to the ground or into a nearby storm drain ditch located out side the fenced area. This storm drain ditch flows into the Willamette River. The substation yard area is covered with six to eight inches of one inch minus crushed rock. See Attachment A.

4.0 CLEANUP PROCEDURES

(40 CFR Part (e)(2)(x))

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control, stop the flow and remove the oil are given in this plan. A spill kit is on site which contains tools, personal protective products, sorbant materials and forms for documenting a spill event.

5.0 SITE SECURITY AND CONTROL

(40 CFR Part 112.7(e)(9))

An 8-foot high metal security fence with gates surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

In the unlikely event of a spill, additional security of off-site areas affected by a spill will be established by operations personnel using barrier tape in the cleanup kit, traffic cones, etc. to designate the exclusion zone.

6.0 PERSONNEL TRAINING AND COMMUNICATION

(40 CFR Part 112.7(e)(10))

Briefings for operations personnel are scheduled regularly to keep them informed of current oil-spill control techniques, sorbant materials, containment materials, protective clothing, equipment, etc. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings.

Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C) and references (see Attachment E).

7.0 INSPECTION AND RECORDS
(40 CFR Part 112.5)

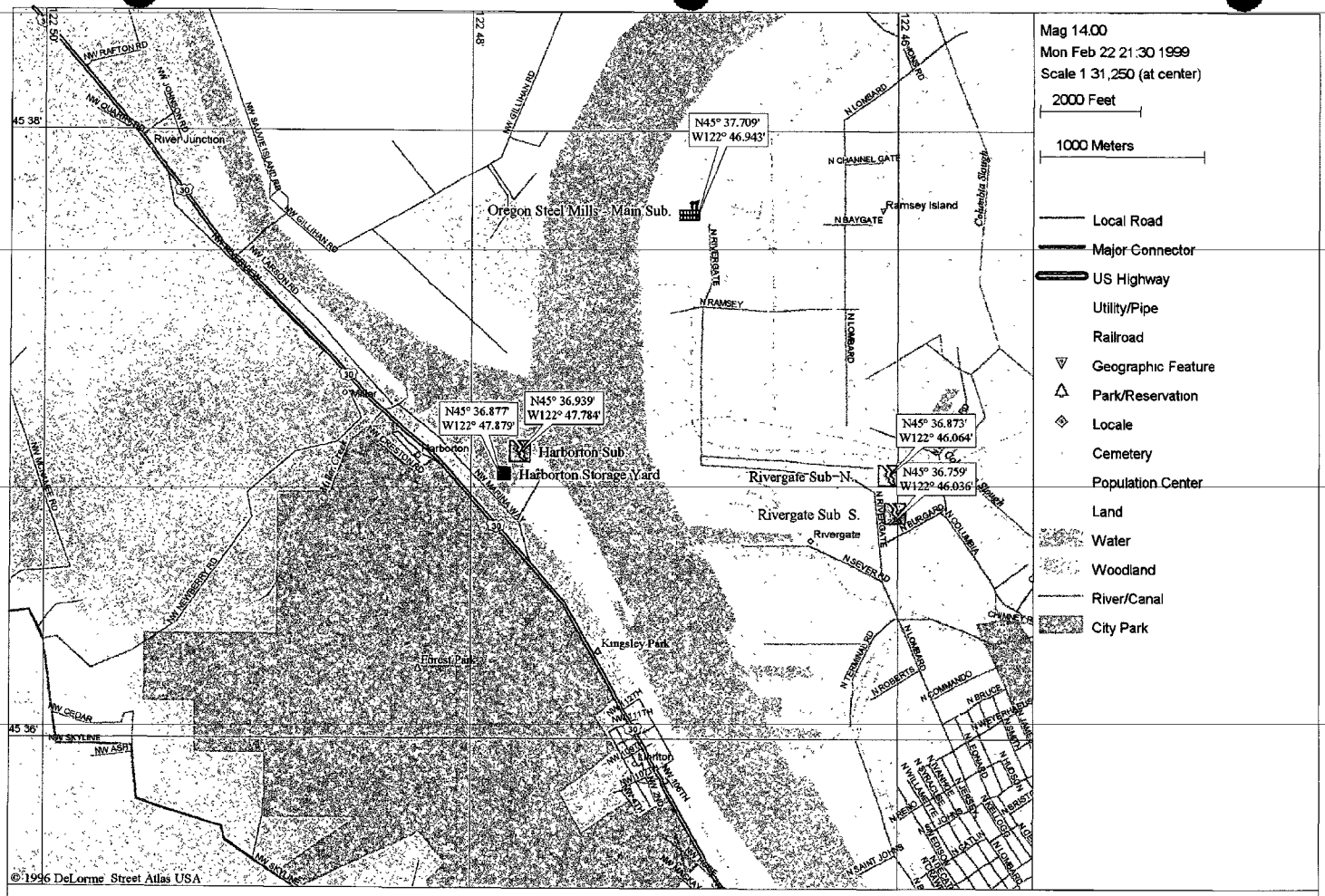
This plan shall be reviewed and evaluated at least once every three years from the date of management approval. In addition, any change in facility design, construction, operation, or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. The Engineer shall review site modifications and additions. The SPCC Plan shall be reviewed, updated and signed by the Engineer and Owner's Manager as required in (40 CFR Sections 112.3 & 112.5 (1996)).

All modifications to the existing facility and its structures or to the areas exterior to the site which do not modify drainage shall be noted on Attachment D. Replacement of non-oil filled equipment or removal of oil filled equipment.

8.0 SPILL HISTORY AT THE FACILITY
(40 CFR Part 112.7(a))

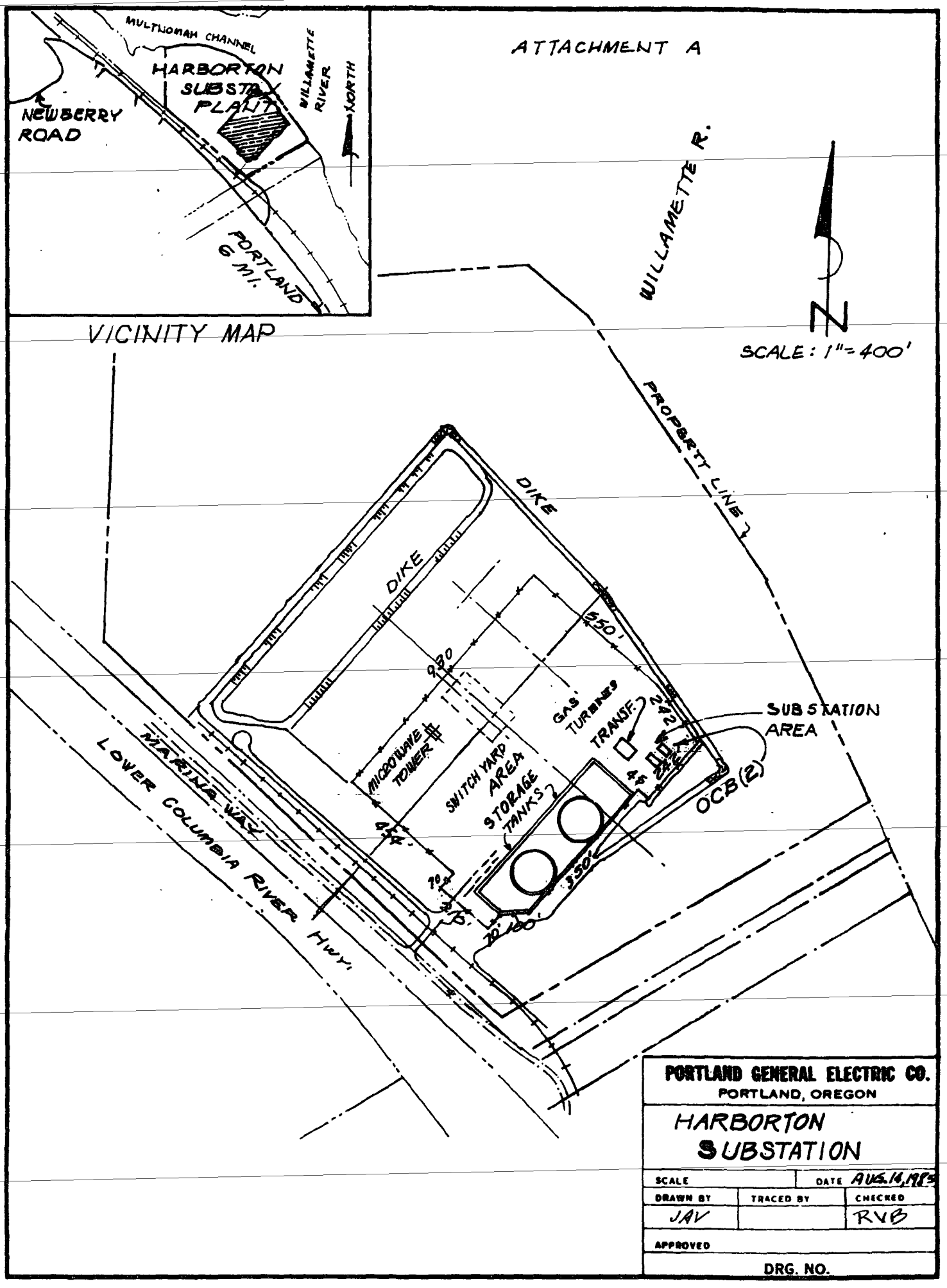
NOTES: Record minor and major oil spills at this facility.

Date	Volume Spilled	Cause and Cleanup



Harborton Sub -12500 NW Marina Way -Portland -Multnomah Co

ATTACHMENT A



PORTLAND GENERAL ELECTRIC CO. PORTLAND, OREGON		
HARBORTON SUBSTATION		
SCALE		DATE AUG. 14, 1985
DRAWN BY	TRACED BY	CHECKED
JAV		RVB
APPROVED		
DRG. NO.		

Number of Units	Number of Containers per Unit	Equipment Unit Type	Volume of Oil /container (Gallons)	Overland Flow Rate from Container (gpm)	Description of Tank Design and Construction	Fail-Safe Engineering Features
2	1	OIL BRKR DIST	55	10	Circular steel tank w/round steel top & flat bottom. 2'D x 2.5' H	Vent Pipe
1	1	OIL BRKR DIST	76	10	Rectangular steel tank w/skid mtd. base 2.5' x 5' x 7'H	Vent Pipe
1	1	TRANSFMR LTC	6483	575	Rectangular steel tank w/flat plate base. 6' x 14' x 13'H	Pressure Relief Valve

Note: Containers of less than 40 gal. capacity may not be listed.

DISTRICT: C — SUBSATION EQUIPMENT LISTED BY LOCATION — LOCATION: HARBORTON

CO.NBR POS. ST.CD	EQUIPMENT DESC	MAN YR CD MD	EQUIPMENT TYPE	LTC/BRKR MECHANISM	SERIAL NBR.	FAULT MVA/KA	RATINGS KVA	KV	AMPS	GALLS OIL	SAMP DATE	PCB LEVEL (PPM) TK 1	TK 2	TK 3	INST JOB	PURCH ORDER	INST DATE	ASSET/ MAINT
21378 U H152	OIL BRKR TRAN	MG 72	AHJ-54-115-10	OA4	20512		10000	115.0	2000	2160		25	3	3	5544	57301		TT
	REMARK : 2-16-82 COPPER EXPANSIONS 2-37-370. STUDE CONNECTORS 1-54-830.																	
21379 U H162	OIL BRKR TRAN	MG 72	AHJ-54-115-10	OA4	20511		10000	115.0	2000	2160		0	0	0	5544	57301		TT
	REMARK : CLOSING COIL M2425. 02/02/93 - AFTER CHANGING SHIMS ON PILOT VALVE --GOT 5 SHOTS. FOUND CENTER TANK TIMING PLUG MISSING ON TOP, HAD TO REP																	
21380 U H114	OIL BRKR TRAN	MG 72	AHJ-54-115-10	OA4	20513		10000	115.0	2000	2160		2	2	2	5544	57301		TT
	REMARK : 5-20-86 USE PARTS FROM H-122 PER NORMINE (SPARE BREAKER).--02/09/93- CORRECTED PROB WITH STICKY LATCH VALVE, REPLACED HIGH PRESSURE HYD.																	
21381 U H138	OIL BRKR TRAN	MG 72	AHJ-54-115-10	OA4	20514		10000	115.0	2000	2160		-5	-5	-5	5544	57301		TT
	REMARK : 10/01/93-INSTALLED NEW COUNTER																	

DISTRICT: C — SUBSATION EQUIPMENT LISTED BY LOCATION — LOCATION: HARBORTON EAST

CO.NBR POS. ST.CD	EQUIPMENT DESC	MAN YR CD MD	EQUIPMENT TYPE	LTC/BRKR MECHANISM	SERIAL NBR.	FAULT MVA/KA	RATINGS KVA	KV	AMPS	GALLS OIL	SAMP DATE	PCB LEVEL (PPM) TK 1	TK 2	TK 3	INST JOB	PURCH ORDER	INST DATE	ASSET/ MAINT
10545 U HR3	TRANSFMR LTC	WH 72	OA	UTT-A70/B	RDP-38974		16800	123.3		6483		3			5544	58504		DD
	REMARK : PCB RESULT LTC 09/84.1C OG KV BIL 10KV FW RF 1.5. SHIP WT 74450.328 GAL OIL REQUIRED FOR RADIATORS. 4025 GAL OIL REQUIRED FOR CORES																	
21242 U R346	OIL BRKR DIST	IT 69	14.4KS-500-12	SE-31A	41-10279-6021		500	14.4	1200	76		10			4191	27606		DD
	REMARK : FIELD CHECKED 10-84. SPARE PARTS: CODE 2-16-660 THRU 2-16-686.																	
21265 U R338	OIL BRKR DIST	AC 70	SDO-15-500	SE-3B	36467-1		18	14.4	1200	55		7			4853	31903		DD
	REMARK : NO LABELS ON BUSHINGS. **OH'D ON 9/19/96, WO # 8400.																	
21266 U R334	OIL BRKR DIST	AC 70	SDO-15-500	SE-3B	36467-2		18	14.4	1200	55		15			4853	31903		DD
	REMARK : FIELD CHECKED 10-84. **OH'D ON 4/14/98 ON WO#13837																	

(ATTACHMENT C)

OIL SPILL CONTINGENCY PLAN

(40 CFR Part 112.7(d)(1))

A copy of the Contingency Plan is kept on file at the Control House at the location shown on Attachment"A" and at EM&C Headquarters. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in reporting any oil discharge to the System Control Center are conspicuously attached to an inside wall of the Control House.

A copy of this plan is on file with the Environmental Services Department and the original copy is kept on record in the System Engineering Department. Additionally, the System Control Center is supplied a copy of the SPCC Plan.

A procedural guide is also kept at the Repair Desk outlining the steps to be taken by that office in notifying the Landscape Services Department should oil spill beyond the substation fencing.

In the event an oil discharge occurs at this site, the following contingency plan will immediately be initiated.

A. Immediate Action to be Taken if Company Personnel Are on Site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.
2. Notify the System Control Center at 464-8343 of the following conditions:
   a. **The facility name.**
   b. **Location.**
   c. **Equipment from which the oil discharge originated.**
   d. **An approximation of direction and quantity of flow.**
   e. **Required time of response.**

B. Action to be Taken by System Control Center Upon Notification of Oil Discharge

The System Control Center will immediately notify the Environmental Services Department and EM&CHeadquarter's Dispatch Desk or the designated representative perEM&C's Emergency Call-Out Procedure. See References Attachment E Section 1 for the PGE Oil Spill Cleanup Procedure.

C. Action to be Taken by the EM&C Manager's Office

Dispatch Company personnel to evaluate and begin containment and cleanup.

D. Action to be Taken by Environmental Services Department

Report oil spill to regulatory agencies if necessary.

E. Containment and Removal of Discharged Oil and Contaminated Debris

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.

2. Sorbent materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If Company personnel and equipment cannot contain the discharge or it gets beyond the fenced area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact Environmental Emergency Services Company at (800) 334-0004.

4. Company personnel and/or Environmental Emergency Services Company shall completely clean up, remove, and dispose of oil and contaminated materials, sorbent materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary shall be made available on an emergency priority basis to effect the cleanup process.

5. Sorbent materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact Environmental Services for a manifest number.

6. Removal of waterborne oil and contaminated waste will be accomplished by EM&C Crews and/or Landscape Services or an approved contractor. Contaminated materials are to be disposed of in accordance with State of Oregon Department of Environmental Quality regulations.

F. Follow-Up Report

1. Environmental Services will prepare a complete report for the Environmental Services Department for subsequent submission to the Environmental Protection Agency and the State of Oregon Department Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed following the oil discharge incident.

2. The certifying engineer will review and make appropriate amendments the SPCC Plan in accordance with 40 CFR Part 112.5.

ATTACHMENT D-1

REVISIONS

SPILL PREVENTION CONTROL AND COUNTERMEASURE COMPLIANCE INSPECTION PLAN

In accordance with 40CFR Part 112.5(b), a review and evaluation of this Spill Prevention Control and Countermeasure (SPCC) Plan is conducted at least once every five years. As a result of this review and evaluation, Portland General Electric System Engineering will amend the SPCC Plan within six months of the review. The result will include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Any technical amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurrences which materially affects the facility potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

(40CFR Part 112.5 (b) & (c))

Changes to this SPCC Plan that are non-technical amendments like changes to phone number and names do not require PE certification. The following will suffice,

I have completed a review of the site and an evaluation of the SPCC Plan for the Substation on (provide the date) and will (will not) amend the Plan as a result.

Review Dates (site)	Review Dates (plan)	Signature	Title of Position	Amendment (circle one)
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**

MANAGEMENT APPROVAL

Portland General Electric is committed to the prevention of discharges of oil in to navigable waters and the environment, and maintains the highest standards for spill prevention control and countermeasures through regular review, updating, and implementation of this SPCC Plan this Substation.

Authorized Facility Representative: William E. Lawson
Title: Senior Civil/Environmental Engineer **Signature:** William E Lawson

ATTACHMENT D-2

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR HARBORTON SUBSTATION

Revisions

SUPV	ENGR	DATE	BY	DESCRIPTION	CHK	APPR

(ATTACHMENT E)
REFERENCES

SECTIONS:

1) PGE's Oil Spill Cleanup Procedure

2) System Load Dispatch Oil/PCB Discharge

3) Portland General Electric Oil Spill Report - Form (1058)

4) PGE Report For Transporting Electrical Equipment Or Material - Form (0080)

5) Emergency Response Plan Information (See Training Program)

THE FOLLOWING SPILL IS NOT A "SPILL EVENT" per Federal Regulations

- A spill that occurs on PGE's property
  AND
- PGE's personnel are aware of it
  AND
- Occurs on surfaces impervious to the substance spilled
  AND
- Is fully contained
  AND
- Is completely cleaned up with no further incident.

IF ANY OF THE ABOVE DO NOT APPLY
ANY OF THE FOLLOWING **IS A "SPILL EVENT":**

- SPILLED OIL WHICH ENTERS OR THREATENS WATERS in harmful quantities (sufficient to cause a film, iridescent appearance or discoloration of surface or shoreline of waters or cause sludge or oily deposits, oil with any quantity of PCBs) ...

OR GREATER THAN 42 GALLONS OF SPILLED OIL that does not threaten to enter waters of the State of Oregon or "navigable waters"

OR SPILLED OIL WITH A PCB CONCENTRATION GREATER THAN 50 ppm that involves grazing land, vegetable gardens, surface water, sewers, ground water or drinking water

OR SPILLED OIL WITH GREATER THAN ONE POUND OF PCBs (for example an approximate 2600 gallon spill of oil containing 50 ppm PCBs)

OR A HAZARDOUS MATERIAL RELEASE in such quantities that facility personnel cannot contain it on PGE's property and outside assistance is required to prevent or mitigate a release of reportable quantities (as defined in 40 CFR 302) to the environment.

ATTACHMENT G

INSPECTIONS, TESTS, AND RECORDS

Site specific information acquired by Portland General Electric personnel pertaining to site inspections, electrical equipment inspections, sample data, chain of custody, lab test results, maintenance records and specifications on oil filled electrical equipment is on file with EM&C at the Oregon City Office.

PORTLAND GENERAL ELECTRIC COMPANY

121 S. W. Salmon
Portland, Oregon 97204

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN

IF A SPILL HAS OCCURRED, PROCEED TO ATTACHMENT "C" FOR IMMEDIATE ACTIONS

Site: Harborton Storage Yard

Implementation Date of Plan: 10/09/1985

Latest Review and Evaluation Date for this SPCC Plan: 12/15/2003

Last Site Inspection: 09/28/2001

Current Facility Site Inspection Date: 11/25/2003 By WEL

This Plan is being fully implemented under **Portland General Electric (PGE)** management approval and direction. The Plan is subject to review and evaluation once every five years. As a result of this review and evaluation, the owner or operator shall amend the **SPCC Plan** within six months of the review. The reviewed SPCC Plan shall include more effective prevention and control technology if: (1) Such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Current copies of this Plan must be kept readily available.
(40 CFR Parts 112.3 & 112.5 (August 16, 2002))

TABLE OF CONTENTS

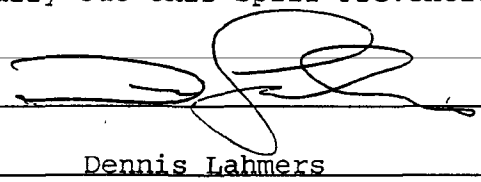
SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)
CERTIFICATION FORM "A"

Various Substation Properties

Portland General Electric Company
121 S.W. Salmon St.
Portland, OR 97204
(503) 464-8820

Management Approval:

I certify that I have authority to commit the necessary resources and approve plans required to carry out this Spill Prevention Control and Countermeasure Plan.

Signature 

Name Dennis Lahmers

Title Manager, EM&C

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN CERTIFICATION FORM "B"

Facility:

Portland General Electric Company
Harborton Storage Yard
12430 St. Helens Road
Portland, Oregon
(503) 650-1405 (Repair Desk Oregon City)

Owner:

~~Portland General Electric Company~~
121 SW Salmon St
Portland, OR 97204
(503) 464-8521 (Environmental Services Dept.)

Implementation Date: 10/09/1985

Certification:

I hereby certify that I have examined these facilities and, being familiar with the provisions of 40 CFR, Part 112, attest that the SPCC Plan has been prepared in accordance with good engineering practices. (40 CFR Section 112.3(d))

Signature William E. Lawson

Name William E. Lawson

Professional Engineer Registration No. 9682

State Oregon

Date July 20, 2000

1.0 GENERAL INFORMATION ABOUT THE FACILITY

1.1 LOCATION OF THE FACILITY

A map of the facility is shown in Attachment A.

1.2 PROXIMITY TO NAVIGABLE WATER

The Harborton Storage Yard is located approximately 300 feet from the Willamette River. A dike separates the Storage Yard form the river which is "navigable waters". The surface runoff is drained from the site to a ditch west of the yard that flows northerly 3,000 feet to the Multnomah Channel. Runoff normally percolates into the soil.

1.3 TOPOGRAPHY AND SOIL CONDITIONS OF THE SITE

The Storage Yard is lightly sloped to the west with many level and pocketed areas within the yard. In reference to Soil Survey, Multnomah County, Oregon by the U.S. Soil Conservation Service, the soil in the site is basically urban land, mostly altered during development. Original soils were gravelly loam, silt loam, or silty clay loam with some sandy material. Drainage, permeability, and runoff flow are not known, The Storage Yard is protected from erosion by 8 inch thick 3/4 inch minus crushed rock. Oil spill penetration into the soil is estimated to be one to two feet before cleanup operations are undertaken.

1.4 PHYSICAL DIMENSIONS OF THE SITE

The is enclosed by a standard industrial type metal chainlink fence approximately 540 feet by 950 feet with a total area of 11.8 acres and within the irrgular shape property area totalling 64 acres.

2.0 OIL AND OIL STORAGE AT THE FACILITY
(40 CFR Part 112.7(a)(3)(i))

2.1 PHYSICAL PROPERTIES OF OIL AND CONTAINMENT VESSELS

The oil stored at the facility is a low-toxic petroleum base insulating oil with a specific weight of 7.28 pounds per gallon and a specific gravity of 0.874. The minimum flash point is 145 C using American Standards of Testing and Measurement (ASTM) Test D-92. The maximum SUS viscosity of the oil using ASTM Tests D-445 and D-88 is as follows:

@100 C..... 3.0/36 sec
@ 40 C..... 12.0/66 sec
@ 0 C..... 76.0/350 sec

The containment vessels of concern are substation transformers, oil circuit beakers, regulators and other oil filled electrical equipment. The individual container capacity (gallons), failure flow-rate (maximums gallons per minute), and fail-safe engineering features very depending on the type and size of the unit. See Attachment B.

Units in the storage yard are not energized. Thus, these units may spill oil as a result of maintenance work. Should a unit be dropped or punctured during maintenance operations, spilled oil is immediately cleaned up.

The directions of flow from the containers are shown in Attachment A.

2.2 POTENTIAL CAUSES FOR OIL DISCHARGES

This SPCC Plan addresses the control of all oil discharges from routine discharge cases. Catastrophic failure, although a very rare occurrence, produces the worst-case condition in terms of quantity of oil released and the extent of environmental pollution possible.

The probable causes of routine operations and catastrophic failure include:

2.2.1 Routine Operations

Small oil discharges can occur should the equipment be damaged while moving or loading the equipment onto a truck for shipment. Transformer oil could be spilled during equipment servicing and maintenance operations at this substation.

- **Spills from servicing equipment** - Oil loss during filling or emptying of the container will be approximately 25 gallons before shutoff can occur, if hose-fitting failure occurs. Upon noticing the discharge or spill, the maintenance crew or operator will close the container valve and shut down the pump. Cleanup operation, in accordance with the Oil Spill Contingency Plan (see Attachment C), will be initiated.
- **Operation** - Cooling radiators and other equipment through which oil flows can develop leaks, PGE good housekeeping

practices require that the ground under such leaks be cleaned up and protected from further contamination and that the leaking part be repaired by maintenance crews. Any contaminated material will be removed and disposed of at a state-approved landfill.

2.2.2 Catastrophic Failure

Catastrophic failure of vessels containing oil is an unusual occurrence. Vessel failure is generally caused by internal pressure buildup resulting from electric arcing deep in the vessel. This occurs faster than relief valves can reduce the pressure. The result is tank rupture. Vandalism or acts of sabotage may also result in catastrophic tank failure. The units stored at this yard are not energized.

- **Transformers** - Up to two-thirds of the oil may be discharged from a transformer because of catastrophic failure. Approximately 25 percent of the discharge can occur within minutes of an accident. If tank failure does not occur, minor oil discharges may result from oil leaking from defective gaskets or punctures in the container.
- **Circuit Breakers** - Catastrophic failure of these devices may cause most of the oil to discharge within minutes of an accident. If tank failure does not occur, but the unit is dropped oil could release through the vent.
- **Oil Switches and Miscellaneous Vessels** - Catastrophic failure of these items may cause the entire contents to be discharged immediately; however, these items have a volume generally less than 50 gallons.

2.3 METHOD OF DETECTING OIL DISCHARGES

An incidental leak, drips and small spills will be noted during regular site visits. If an oil discharge is detected, the EM&C Crew notify PGE System Control Center (SCC) promptly of the spilled oil. Emergency maintenance crews are dispatched immediately to the storage yard. If the emergency maintenance crew see oil spilled on site they will notify SCC of the event. Large spills will activate the Oil Spill Contingency Plan (Attachment C).

3.0 SECONDARY CONTAINMENT SYSTEM

(40 CFR Part 112.3(d)(1)(v) & Part 112.7(a))

This site is not equipped with any containment system. The storm water generally seeps into the yard surface during light rainfall. During heavy rain storms, the water flows overland to the west from the storage area to an open ditch. The drainage from the ditch flows to the north into a wet land area. The wet land water empties into the Willamette River. The storage yard area is covered with four to six inches of one inch minus crushed rock. See Attachment A.

4.0 CLEANUP PROCEDURES

(40 CFR Part 112.7(a)(3)(iv))

The Oil Spill Contingency Plan (see Attachment C) will be activated in the event of an oil discharge. The procedures used to control, stop the flow and remove the oil are given in this plan. A spill kit is on site, which contains tools, personal protective products, sorbing materials and forms for documenting a spill event.

5.0 SITE SECURITY AND CONTROL

(40 CFR Part 112.7(g)(1) through (5))

An 8-foot high metal security fence with gates surrounds the facility (see Attachment A). The gates are kept locked at all times except when PGE personnel are on the premises. PGE personnel regularly inspect the facility.

In the unlikely event of a spill, operations personnel using barrier tape in the cleanup kit, traffic cones, etc. to designate the exclusion zone will establish additional security of off-site areas affected by a spill.

6.0 PERSONNEL TRAINING AND COMMUNICATION

(40 CFR Part 112.7(f)(1)&(3))

Briefings for operations personnel are scheduled regularly to keep them informed of current oil-spill control techniques, sorbing materials, containment materials, protective clothing, equipment, etc. Current SPCC Plan requirements and pollution control laws, rules, and regulations are also included in these briefings. Periodic information training sessions are held for division and other employees who might be involved in oil containment and cleanup operations.

The training program outlines steps to be followed in alerting various Company departments, governmental agencies, and cleanup personnel. Further information is provided in the attached Contingency Plan (see Attachment C) and references (see Attachment E).

7.0 INSPECTION AND RECORDS

(40 CFR Part 112.7(e))

This plan shall be reviewed and evaluated at least once every five years from the date of management approval. In addition, any change in facility design, construction, operation, or maintenance which affects the facility's potential for the discharge of oil into navigable waters should be indicated by revision to the plan within six months of such change. The Engineer shall review site modifications and additions. The SPCC Plan shall be reviewed, updated and signed by the Engineer and Owner Manager as required in (40 CFR Sections 112.3 & 112.5 (August 16, 2002)).

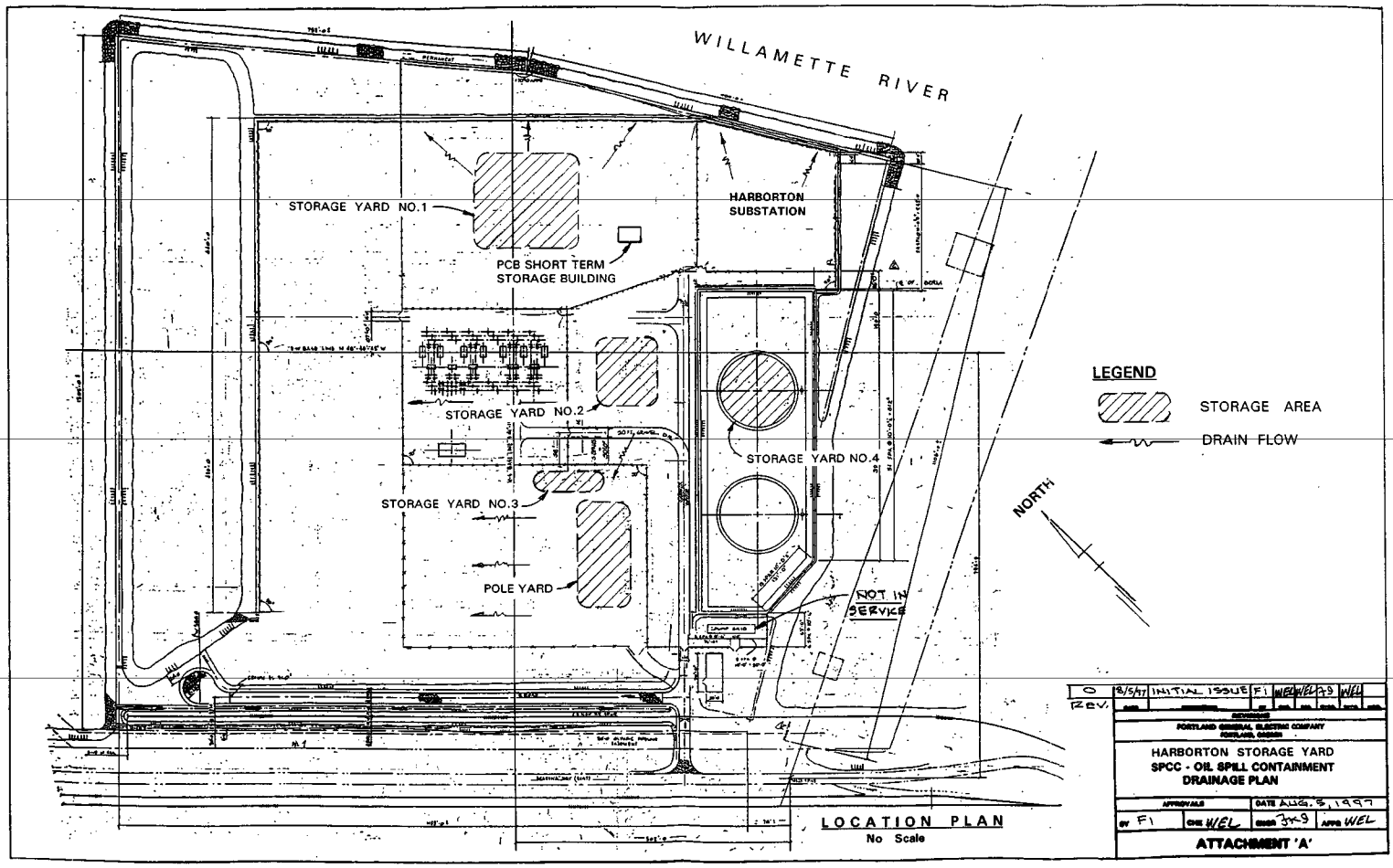
All modifications to the existing facility and its structures or to the area exterior to the site, which do not modify drainage, shall be noted on Attachment D. Replacement of non-oil filled equipment or removal of oil filled equipment.

8.0 SPILL HISTORY AT THE FACILITY

(40 CFR Part 112.4(a) & 112.7(e)&(f)(3))

NOTES: Record minor and major oil spills at this facility.

Date	Volume Spilled	Cause and Cleanup


WILLAMETTE RIVER
STORAGE YARD NO.1
HARBORTON SUBSTATION
PCB SHORT TERM STORAGE BUILDING
STORAGE YARD NO.2
STORAGE YARD NO.4
STORAGE YARD NO.3
POLE YARD
NOT IN SERVICE
LEGEND
STORAGE AREA
DRAIN FLOW
NORTH
LOCATION PLAN
No Scale
0 REV. 8/5/97 INITIAL ISSUE F1 WEL WEL 3-9 WEL
PORTLAND GENERAL ELECTRIC COMPANY
HARBORTON STORAGE YARD
SPCC - OIL SPILL CONTAINMENT
DRAINAGE PLAN
APPROVALS
DATE AUG. 5, 1997
BY F1 CHK WEL DSGN 3-9 APPR WEL
ATTACHMENT 'A'

ATTACHMENT B

HARBORTON STORAGE YARD

Number of Units	Number of Containers Per Unit	Equipment Unit Type	Volume Range of Oil/container (Gallons) (*See Note 1)	Description of Tank Design and Construction
STORAGE YARD NO.1 (Within security fence and alarmed)				
6	1	Transformers	3800 to 2700	Rectangular and/or oval steel tank
3	1	Transformers	2400 to 2100	Rectangular and/or oval steel tank
4	1	Transformers	1600 to 1100	Rectangular and/or oval steel tank
1	1	Transformer	700	Rectangular and/or oval steel tank
10	1	Regulators	800 to 500	Rectangular steel tank
5	1	Regulators	180	Rectangular steel tank
1	3	OCB	2000/tank	3 tanks/unit with circular steel case
2	3	OCB	200/tank to 70/tank	3 tanks/unit with circular steel case
5	1	OCB	45	Circular steel case
1	1	Tank	800	Circular steel tank 4' dia. X 9' long
1	1	Tank	11000	Circular fiberglass tank 10' dia. X 20' high
1	1	Tank	700	Circular fiberglass tank 4' dia. X 8' long
150	1	Drum	55	55 gallon steel drum
STORARAGE YARD NO.2 (Within security fence)				
3	1	Transformers	6700 to 6000	Rectangular and/or oval steel tank
4	1	Transformers	4800 to 4100	Rectangular and/or oval steel tank
2	1	Transformers	3700 to 1800	Rectangular and/or oval steel tank
3	1	Transformers	1100 to 800	Rectangular and/or oval steel tank
1	1	Tank	7000	Trailer tanker
1	1	Tank	7000	Circular steel tank 8' dia. X 20' long
1	1	Tank	10000	Circular steel tank 8' dia. X 30' long
10	1	Drum	55	55 gallon steel drum

ATTACHMENT B

HARBORTON STORAGE YARD (continued)

STORAGE YARD NO.3
(Within security fence)

1	1	Tank	10000	Circular steel tank 8' dia. X 30' long

STORAGE YARD NO.4
(Within the steel tank structure)

41	1	Drum	55	55 gallon drum (contain dry product)

NOTES:

1. * Denotes listed equipment and tanks may contain varying amounts of oil.

2. Inventory of equipment listed was performed August 1,1997.

VESSELS CONTAINING OIL AT HARBORTON STORAGE YARD

Item #	Co. ID #	Number of Containers	Type of Containers	Volume of Oil per Container (Gallons)	Overland Flow Rate from Container (gpm)	Description of Tank Design and Construction	Fail-Safe Engineering Features
1		1	USED OIL TANK	100	20 - 50	Double wall coated steel tank.	Manual Leak detection
2		4	USED OIL DRUMS	55	5 - 15	Single wall painted steel box holds four 55 gallon drums	Manual Leak detection
3		Above 50 Units	POLE MOUNT TRANSFORMERS	VARIES 5 - 200	1 - 25	Single wall coated steel	None
4		Above 20 Units	PAD MOUNT TRANSFORMERS	50 - 300	5 - 50	Single wall coated steel storage tank.	None
5		Above 10 Units	OTHER OIL FILLED TANKS	50 - 1,000	10 - 150	Single wall coated steel storage tank.	Vent
6		1	GASOLINE FUEL TANK	10,000	20 - 50	Double wall coated steel above ground fuel tank.	Automatic Leak detection monitor
7		1	DIESEL FUEL TANK	10,000	20 - 50	Double wall coated steel above ground fuel tank.	Automatic Leak detection monitor

NOTE: Containers of less than 55 gallons capacity are not requied to be listed in this SPCC Plan.
(40 CFR Part 112.1(d)(2)(ii))

(ATTACHMENT C)
(40 CFR Part 112.7(a)(4)&(5))

OIL SPILL CONTINGENCY PLAN

A copy of the Contingency Plan is kept on file at the Harborton Control House at the location shown on Attachment "A" (Site Plan) and at EM&C Headquarters. In addition to this Contingency Plan, procedural guides outlining the steps to be followed in reporting any oil discharge to the System Control Center are conspicuously attached to an inside wall of the Equipment Enclosure.

A copy of this plan is on file with the Environmental Services Department (ESD) and the original copy is kept on record in the System Engineering Department (SED) with the Engineer of record.

A procedural guide is also kept at the Repair Desk outlining the steps to be taken by that office in notifying the EM&C Oil Spill Response Crews.

In the event an oil discharge occurs at this site, the following contingency plan will be initiated immediately. *(40 CFR Part 112.7(a)(5))*

A. Immediate action to be taken if company personnel are on site

1. Make every reasonable effort to stop or retard the flow of oil from the container with manpower, equipment, and materials on site or otherwise immediately available.

2. Notify the System Control Center of any oil leak or spilled oil at 464-8343 with the following information and conditions *(40 CFR Part 112.7(a)(4))*:
   a. **The facility name: (Harborton Storage Yard).**
   b. **Location: (12500 NW Marina Way, Portland 97231).**
   c. **Equipment from which the oil discharge originated: (See Attachments A & B).**
   d. **An approximation of direction and quantity of flow: (See Attachments A & B).**
   e. **Required time of response: (Estimated hours and minutes).**

B. Action to be taken by System Control Center upon notification of an oil discharge

The System Control Center will immediately notify the Environmental Services Department and EM&C Headquarter Dispatch Desk or the designated representative per EM&C Emergency Call-Out Procedure. See References Attachment E Section 1 for the PGE Oil Spill Cleanup Procedure.

C. Action to be taken by EM&C manager's office

Dispatch PGE response personnel to evaluate and report site oil spill conditions. The crew shall stop any flow of oil and begin containment of any oil contaminated area and start cleanup procedures.

D. **Action to be taken by Environmental Services Department (ESD)**

Report oil spill to regulatory agencies as required by DEQ and/or 40 CFR Part 302 (See Attachment F). *(40 CFR Part 112.7(a)(3)(vi))*

1. Any oil discharges reaching navigable waters or waters of the State of Oregon , ESD shall contact the Oregon Emergency Response System (OERS):

   Oregon Emergency Response System
   1-800-452-0311
   or
   State of Oregon Department of Environmental Quality
   DEQ Duty Officer
   503- 229-5263
   And contact the
   Duty Officer, National Response Center
   1-(800- 424-8802 (24 hours)

   FAILURE TO NOTIFY BOTH OF THE ABOVE AGENCIES IS A CRIMINAL OFFENSE PUNISHABLE BY A $10,000 FINE AND/OR UP TO ONE YEAR IMPRISONMENT (OPA-92).

2. Discharges' not reaching navigable waters or waters of the State of Oregon and the release is 42 gallons or grater, ESD shall call:

   Oregon Emergency Response System
   1-800-452-0311

   In the event OERS cannot be reached, call the:
   Duty Officer, National Response Center
   1-800- 424-8802 (24 hours)

   FAILURE TO NOTIFY THE OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY SHALL BE SUBJECT TO A CIVIL PENALTY OF NOT LESS THAN $50 AND NOT MORE THAN $10,000 FOR EACH DAY OF VIOLATION.

3. Other Outside Notifications
   Police, Fire Medical, HazMat 9-911
   (Indicate if Hazardous Materials are involved)

E. **Containment and removal of discharged oil and contaminated debris**
(40 CFR Part 112.7(a)(5) & (c)(1))

1. All catch basins or drainage structures will be temporarily bermed or dammed to prevent oil from entering established watercourses or municipal drainage and sewer systems.
2. Adsorbing materials such as Fibrelite, absorbent pads, hay, sawdust, or sand shall be applied to the discharge area to absorb and contain the oil.

3. If PGE spill response personnel and equipment cannot contain the discharged oil or if oil gets beyond the property area or if the magnitude of the discharge is such that additional manpower, equipment, or materials are required, contact NRS Environmental Company at 1-800-337-7455.
4. PGE spill response personnel and/or NRC Environmental Company shall completely clean up, remove, and dispose of oil and contaminated materials. Adsorbing materials, pumping equipment, front-end loaders, dump trucks, and other equipment deemed necessary, shall be made available on an emergency priority basis to affect the cleanup process.
5. Adsorbing materials, oil-soaked soil and gravel, and other contaminated debris will be moved to an authorized solid waste landfill. Contact the Environmental Services Department for a manifest number.
6. EM&C Oil Spill Response Crews or an approved contractor will accomplish removal of waterborne oil and contaminated waste. Contaminated materials are to be disposed of in accordance with State of Oregon Department of Environmental Quality regulations.

F. Follow-up Report

1. Environmental Services will prepare a complete report for the Environmental Services Department for subsequent submission to the U.S. Environmental Protection Agency and the State of Oregon Department of Environmental Quality if required. The report shall outline circumstances of the discharge, notification of appropriate Company and governmental agency personnel, containment procedures, removal and cleanup procedures, and final waste disposal procedures. This report will be filed following the oil discharge incident.

2. In the event of a reportable discharge (see 40 CFR Part 112.4(a), the certifying engineer shall be notified. The certifying engineer shall determine if additional preventive measures are needed or contemplated to minimize the possibility of recurrence. The Engineer shall review and make appropriate amendments to the SPCC Plan in accordance with 40 CFR Part 112.7.

ATTACHMENT D-1

(40CFR Part 112.5 (b) & (c))

REVISIONS

SPILL PREVENTION CONTROL AND COUNTERMEASURE COMPLIANCE INSPECTION PLAN

In accordance with *40CFR Part 112.5(b & c)*, a review and evaluation of this Spill Prevention Control and Countermeasure (SPCC) Plan is conducted at least once every five years. As a result of this review and evaluation. Portland General Electric System Engineering will amend the SPCC Plan within six months of the review. The result will include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Any technical amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurrences which materially affects the facility potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

Changes to this SPCC Plan that are non-technical amendments like changes to phone number and names do not require PE certification. The following will suffice.

I have completed a review of the site and an evaluation of the SPCC Plan for the facility on (provide the date) and will (will not) amend the Plan as a result.

Review Dates (site)	Review Dates (plan)	Signature	Title of Position	Amendment (circle one)
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**
_____	_____	_____	_____	**will / will not**

MANAGEMENT APPROVAL

Portland General Electric is committed to the prevention of discharges of oil in to navigable waters and the environment, and maintains the highest standards for spill prevention control and countermeasures through regular review, updating, and implementation of this SPCC Plan for this campus.

Authorized Facility Representative: William E. Lawson

Title: Senior Civil/Environmental Engineer **Signature:** _____

ATTACHMENT D-2
(40 CFR Part 112.5(a))

OIL SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR HARBORTON STORAGE YARD

Revisions

SUPV	ENGR	DATE	BY	DESCRIPTION	CHK	APPR

PORTLAND GENERAL ELECTRIC **FACILITIES INSPECTION**
Field Review of the facility per 40 CFR Part 112.5(b)

Facility **Harborton Storage Yard** Date _____ Initials _____

Review project profiles on record in the office. Note any changes to the site resulting from construction projects. Enter job numbers on Attachment D. _____

Check and note arrangement for new or removed units. _____

Look at drainage on the site and compare it with that shown on Attachment A of the existing SPCC plan. Note any changes. _____

Note changes to site drainage and any off site changes to drainage systems or changes to natural drainage ways. __
_____

Mark on Attachment A the location of any wetland areas. _____

Identify any changes to the fence line or property boundary. _____
_____

Document off site changes resulting from construction by others that may be impacted by an oil spill from the areas storing oil filled equipment. Note if an oil spill containment system is impacted or if oil spill containment structures are needed or repair is required. _____
_____

Record on Attachment A any utilities that have been installed or changed. _____

Confirm existing oil spill containment structures location is as shown on Attachment A. _____

Report on the condition of the existing oil containment structures. _____
_____

Check oil spill containment kit. Record number _____ Check to see if the kit has been opened.
_____

Note if the total volume of oil for the site has changed as a result of oil filled equipment change out.
_____

Check with Environmental Services for reported oil spills for this substation. Record oil spills in section 8 on the table. _____

Record in section 8 of the SPCC plan, any visible sign of oil leaks or spills at the site. _____

Check for changes in the serial number of oil filled equipment (the above ground tanks are the most important units). _____

ADDITIONAL NOTES ON SITE REVIEW: _____
_____
_____

Note: Submit copy to William E. Lawson 3WTC-Plaza. Attach photos if any.
Revision: December 10, 2003

(ATTACHMENT E)
(40 CFR Part 112.3 (d)(1)(iii))

REFERENCES

SECTIONS:

1) PGE's **Oil Spill Cleanup Procedure**

2) System Load Dispatch **Oil/PCB Discharge Report**

3) **Portland General Electric Oil Spill Report** - Form (1058)

4) **PGE Report For Transporting Electrical Equipment Or Material** - Form (0080)

5) **Emergency** Response **Plan Information** (See Training Program)

6) **40 CFR Part 112.1 through Part 112.8** (August 16, 2002)

(ATTACHMENT F)
(40 CFR Part 110)

PGE's policy requires personnel to report all oil releases. Irrespective of the size or location of the spill or leak, personnel shall call Load Dispatch at 503-464-8343, regardless of whether it is a "spill event" under the following definition.

Note: the following defines whether a spill is a regulated reportable spill event under federal regulated reporting requirements.

THE FOLLOWING SPILL IS NOT A "SPILL EVENT" per Federal Regulations, but must be report to PGE Load Dispatch at 503-464-8343.

- A spill that occurs on PGE property
  AND
- PGE personnel are aware of it
  AND
- Occurs on surfaces impervious to the substance spilled
  AND
- Is fully contained
  AND
- Is completely cleaned up with no further incident.

IF ANY OF THE ABOVE DO NOT APPLY
ANY OF THE FOLLOWING IS A "SPILL EVENT":

- SPILLED OIL WHICH ENTERS OR THREATENS WATERS in harmful quantities (sufficient to cause a film, iridescent appearance or discoloration of surface or shoreline of waters or cause sludge or oily deposits, oil with any quantity of PCB)

OR GREATER THAN 42 GALLONS OF SPILLED OIL that does not threaten to enter waters of the State of Oregon or "navigable waters"

OR SPILLED OIL WITH A PCB CONCENTRATION GREATER THAN 50 ppm that involves grazing land, vegetable gardens, surface water, sewers, ground water or drinking water

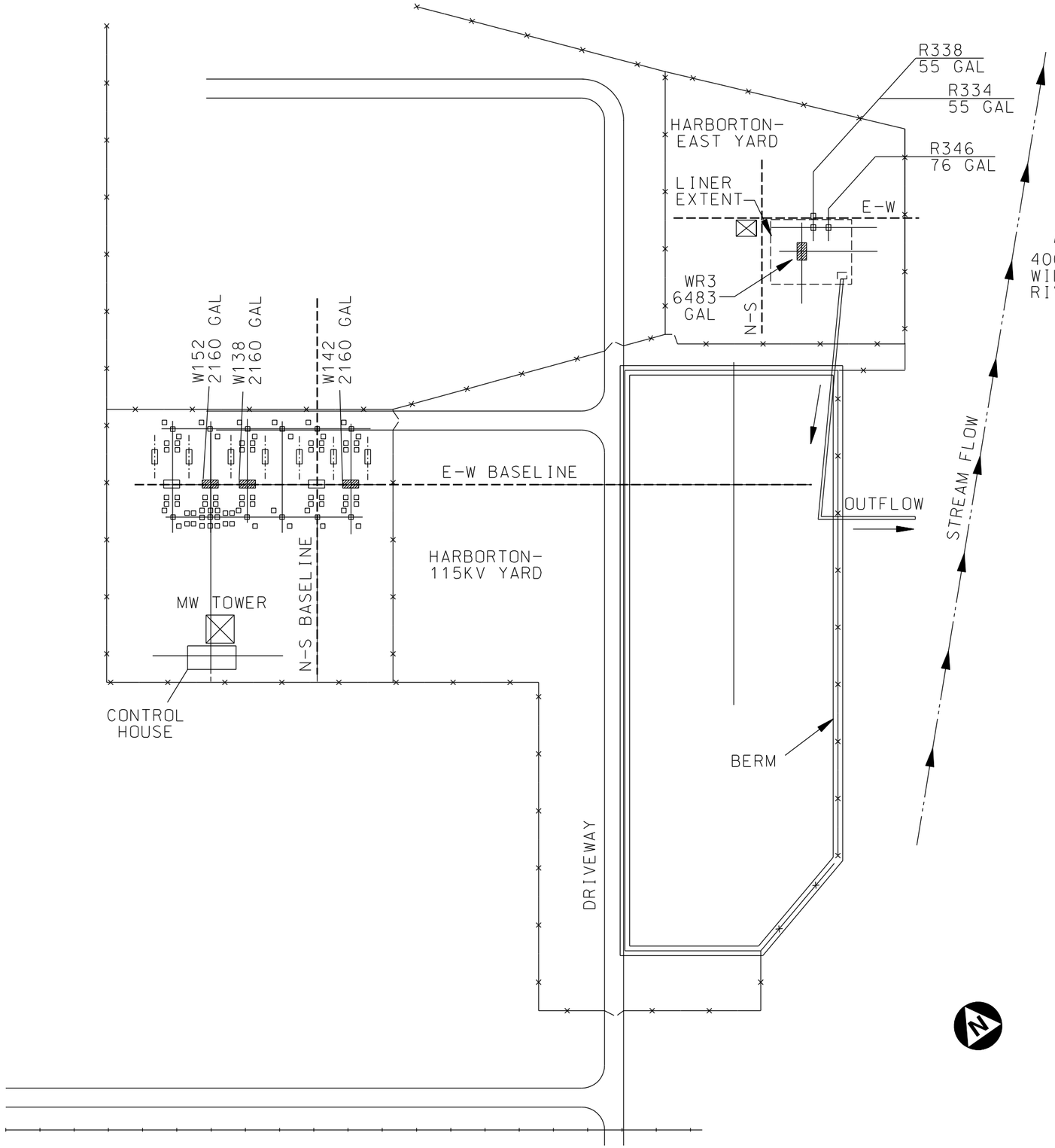
OR SPILLED OIL WITH GREATER THAN ONE POUND OF PCBs (for example an approximate 2600 gallon spill of oil containing 50 ppm PCBs)

OR A HAZARDOUS MATERIAL RELEASE in such quantities that facility personnel cannot contain it on PGE property and outside assistance is required to prevent or mitigate a release of reportable quantities (as defined in 40 CFR 302) to the environment.

(ATTACHMENT G)
(40 CFR Part 112.3(d)(1)(iv))

INSPECTIONS, TESTS, AND RECORDS

Site specific information acquired by Portland General Electric personnel pertaining to site inspections, electrical equipment inspections, sample data, chain of custody, lab test results, maintenance records and specifications on oil filled electrical equipment is on file with EM&C at the Portland Service Center Office.



REFERENCES

EAST YARD:

C-11302	FOUNDATION PLAN
C-11301	PILING PLAN
CE-8037	FENCE AND LOCATION PLAN
C-30483	OIL CONTAINMENT SYSTEM PLAN, SECTIONS, & DETAILS
C-11287	115KV AREA CONDUIT PLAN
C-11288	12.5KV AREA CONDUIT PLAN
C-11289	GROUNDING PLAN

115KV YARD:

C-11018	FOUNDATION PLAN
C-11019	GRADING AND DRAINAGE PLAN

LEGEND

- LINER EXTENT
- PIPING
- FLOW
- SURFACE FLOW
- LOCATION OF OIL CONTAINING EQUIPMENT AND VOLUMES OF OIL
- LOCATION OF OIL SPILL RESPONSE KIT

SCALE: 1" = 120'

REV.	DATE	REVISION DESCRIPTION	DRAWN	ENGR.	APPD.
0	/ /	ORIGINAL ISSUE.			
	/ /				

PGE

HARBORTON SUBSTATION
FACILITY DIAGRAM

INDEX NO. HRBT-SPCC

SHEET 1 OF 1

DISTR. CODE D-SPCC